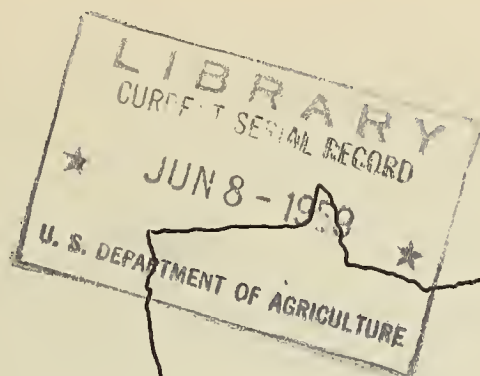


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GENERAL REPORT 56
MAY 1959

Grade A Milk Marketing by Manufacturing Co-ops



Findings in Minnesota, Wisconsin, and Iowa

by Donald R. Davidson

FARMER COOPERATIVE SERVICE

U. S. DEPARTMENT OF AGRICULTURE

FARMER COOPERATIVE SERVICE
U. S. DEPARTMENT OF AGRICULTURE
WASHINGTON 25, D. C.

Joseph G. Knapp, Administrator

The Farmer Cooperative Service conducts research studies and service activities of assistance to farmers in connection with cooperatives engaged in marketing farm products, purchasing farm supplies, and supplying business services. The work of the Service relates to problems of management, organization, policies, merchandising, product quality, costs, efficiency, financing, and membership.

The Service publishes the results of such studies, confers and advises with officials of farmer cooperatives; and works with educational agencies, cooperatives, and others in the dissemination of information relating to cooperative principles and practices.

This study was conducted under authority of the Agricultural Marketing Act of 1946 (RMA, Title II).

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Highlights

Dairy manufacturing cooperatives in the Midwest face a challenging decision. Originally they set up plants to manufacture ungraded milk. Now, because of local market demand, pressure from dairy farmers, competition from other firms or merely a belief in a growing trend toward a single standard of milk for both fluid and manufacturing use -- they must decide whether to diversify their operations to include marketing Grade A milk.

Many of these cooperatives believe they see a growing trend toward a single Grade A standard for milk, whether it is to be manufactured or packaged for consumer use. Some of them are already marketing Grade A in addition to manufacturing ungraded milk. Some are also marketing fluid non-Grade A in addition to manufacturing it. For those who consider entering the Grade A field, knowledge of the marketing experience of other concerns and trends in the same general area may be the most helpful guideposts.

To help meet the need for information on which the cooperatives can base their decisions, Farmer Cooperative Service made the survey reported here in 1957. It covered operations of 124 dairy manufacturing cooperatives located in three States -- Minnesota, Wisconsin, and Iowa.

Of the 124 reporting cooperatives, 81 were marketing Grade A fluid milk. These 81 manufacturing cooperatives received 2.5 billion pounds of Grade A milk, or 44 percent of their annual intake in 1956. The remaining 56 percent

was mainly manufacturing grade milk with some farm-separated and factory-separated cream.

Other highlights of the survey were as follows:

Entry into Grade A

Peak years for diversification were from 1951 to the time of the survey, when about half the reporting concerns added Grade A functions. Two-thirds of the cooperatives diversified because they believed there was a trend toward Grade A production. Other reasons included greater profit for farmer-patrons, growing local customer demand and increasing procurement competition.

Half the Grade A milk, or about 1.3 billion pounds, had no fluid market but was manufactured. Of the Grade A reaching fluid outlets, 82 percent was sold as bulk milk and cream. Bottled milk and cream sales made up the remaining 18 percent.

Problems

Nearly a third of the cooperatives could not market even 40 percent of their Grade A milk in fluid form, indicating market outlets need careful appraisal before further diversification is attempted.

As the previous statements would indicate, supply in excess of demand, coupled with various forms of marketing competition, ranked high on the list of

problems facing firms already handling Grade A. Problems varied between firms selling Grade A milk in bulk and those bottling it. Bulk sellers decried some regulations in Federal Milk Orders and seasonality in market demand. Bottled milk marketing firms listed more problems of marketing competition -- from lower-priced milk, milk in paper containers, and large rival plants.

Outlook

Optimistically, most firms handling Grade A milk thought their fluid sales would increase during the following few years and that they would have more farmer-patrons producing Grade A milk.

Volume of Grade A producers was twice as much a day as that of manufacturing milk patrons, who outnumbered Grade A producers 2 to 1. Each group shipped about the same yearly volume of milk, showing the greater productive capacity and size of Grade A herds.

Dairy manufacturing cooperatives with large memberships usually had a large number of Grade A producers. In the 12 biggest concerns, with 1,000 or more members, 46 percent of the members produced Grade A milk. Over half the reporting cooperatives, however, had less than 400 patrons each, with 61 percent of these patrons shipping manufacturing grade milk.

Prices Paid

Cooperatives paid an average Grade A can milk premium of 51 cents. The premium based on prices in Federal order markets, was estimated at 53 cents, indicating that, on an overall basis, Grade A premiums paid by reporting concerns were about equal to actual market returns. These findings do not support the frequently made

assertion that manufacturing grade producers help subsidize Grade A operations. In individual instances, however, manufacturing grade producers may subsidize Grade A.

Plant Characteristics

When cooperative plants diversified into Grade A fluid handling, the number selling bulk milk about equalled the number bottling milk. Of 81 manufacturing cooperatives with 96 plants receiving Grade A milk directly from dairy farmers, 44 plants had added milk bottling to a manufacturing operation and 43 had combined bulk sales of milk or cream or both with manufacturing. Only 5 plants were Grade A receiving stations, and only 4 were milk bottling plants.

Almost all reporting concerns manufactured butter as a primary operation. Other major products included spray nonfat dry milk, ice cream, and roller nonfat dry milk. The large-volume associations handling Grade A milk, were the most greatly diversified. Since the start of Grade A handling, reporting cooperatives have increased the number of functions performed and switched from glass to paper containers. When they began handling Grade A milk, only 5 percent sold bulk milk, bulk cream, and bottled milk in combination. By 1956, the number had tripled.

Separate intake systems prevailed in 9 of 10 bulk selling plants and 5 of 10 bottling plants. Two-thirds of the remaining plants with the same intake line used a Y-dump -- that is, they used receiving facilities with separate or divided weigh tanks. Federal recommendations, State regulations, and local ordinances made it difficult to use the same intake system for both grades, although it was still done in some places.



More and more dairy manufacturing cooperatives in the Midwest are diversifying into Grade A milk handling. The co-op shown above uses the same can intake room for Grade A and manufacturing grade milk, but has a separate weigh-can assembly.

Wisconsin recommended that all dairies constructed or altered have separate Grade A facilities.

Non-Grade A Milk

Turning to the 43 dairy manufacturing cooperatives selling non-Grade A fluid milk, we find that most of them expanded into the fluid milk field shortly after World War II because of local customer demands. Fluid milk marketing had resolved into much more of a sideline with the non-Grade A firms than with the Grade A handling associations. About 90 percent of all milk qualified for fluid use received by firms marketing non-Grade A fluid milk went into manufactured products.

While firms marketing non-Grade A fluid milk experienced many problems similar to those of firms handling Grade A, they also had to contend with strong competition from Grade A bottled milk. Nor did they have the optimism of firms handling Grade A concerning future sales. About half the concerns selling ungraded fluid milk were considering

expanding into the Grade A field.

Firms marketing ungraded fluid milk were small, 9 of 10 having less than 400 patrons each. None had over 800 farmer-members. Non-Grade A producers who shipped milk qualified for fluid use averaged not quite half the volume per patron per day of Grade A producers. Yet they earned a small premium, averaging about 14 cents a hundred-weight, over the price received by patrons shipping milk qualified for manufacturing use only.

Single Standard?

Although data in this report point up the present inadequacy of fluid markets for Grade A milk, some dairy experts reflect the growing optimism of many cooperatives, going so far as to assert that ultimately all markets will demand one quality of milk acceptable for all purposes. If the single standard is adopted, concerns now adapting themselves for Grade A will be ready to efficiently serve their patrons and the dairy industry.

Grade A Milk Marketing by Manufacturing Co-ops

Findings in Minnesota, Wisconsin, and Iowa

by Donald R. Davidson

*Dairy Branch
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Cooperative dairy manufacturing firms in the Midwest are concerned with opportunities, costs, and problems involved in handling Grade A fluid milk. Many of them feel a competitive pressure to add Grade A operations but require a knowledge of market opportunities and fuller knowledge of other organizations' experience in deciding whether to expand into the Grade A field. While data for this report were drawn entirely from cooperatives, similar problems confront noncooperative manufacturing firms.

In the past, manufacturing cooperatives diversifying into the ungraded¹ fluid milk field have had wider market opportunities than those that have not diversified. However, changing consumer demand for table milk makes it more and more difficult to put ungraded fluid milk into the highest use classes. Each year the number of cooperatives selling ungraded milk in the fluid market declines.

Raising quality standards is not confined to fluid milk markets. Consumers are also becoming more quality conscious, more interested in the conditions

under which their manufactured dairy products are produced. High quality is essential in our modern and keenly competitive food markets, where dairy products vie with other substitutable foods.

Many farmer-patrons think the future holds greater promise for Grade A producers. They feel increased returns will more than offset the cost of converting to Grade A.² Others believe bulk tank development will make sanitary requirements stricter and eventually only Grade A fluid milk will be acceptable. Such producer sentiment results in strong demands upon association directors and managers to provide facilities and markets for Grade A milk.

To help cooperatives make sound economic decisions about handling Grade A fluid milk, Farmer Cooperative Service in 1957 studied dairy manufacturing associations with fluid operations in Iowa, Minnesota, and Wisconsin, where we find about two-thirds of the country's dairy cooperatives. The upper Midwest is, of course, the principal remaining dairy manufacturing area.

Of 196 dairy manufacturing cooperatives in the tri-State area marketing fluid milk, 124 responded to the survey--81 selling Grade A fluid milk; 43, ungraded fluid milk.

¹Ungraded fluid milk or manufacturing grade milk, as used in this study, means milk not required to meet sanitary standards above those for manufacturing purposes, and, except in markets without an inspection code, not eligible for fluid marketing.

²Grade A milk, as used in this survey, means milk inspected by either State or local health departments, under requirements of a health regulation with minimum standards approximately those of the U. S. Public Health Service "Recommended Milk Ordinance and Code," 1953 edition.

This report deals mainly with cooperatives currently marketing Grade A fluid milk. It considers their size, location, and other major factors that determine the kind and number of Grade A

marketing functions a cooperative can perform. It also provides guides to help cooperatives decide whether to handle Grade A fluid milk or to evaluate present Grade A operations.

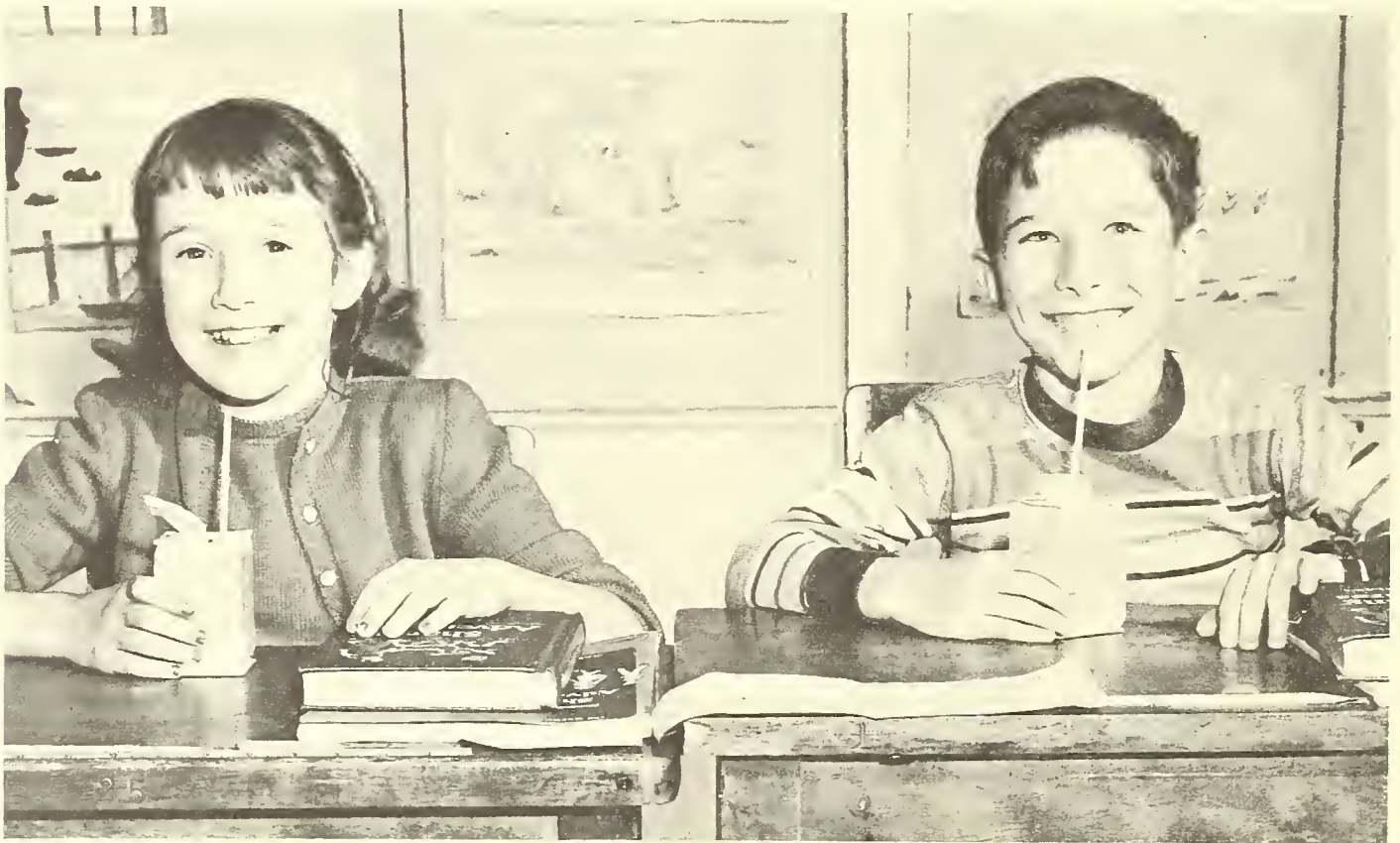
Objectives and Procedures in Study

Farmer Cooperative Service made this study to find guides for improving Grade A handling in the tri-State area. The first step was to learn what methods manufacturing cooperatives were using in marketing fluid milk. The second was to discover factors determining kind and number of Grade A functions a cooperative might successfully perform.

Four of five dairy cooperatives in the north-central region are located in Minnesota, Wisconsin, and Iowa. Mail questionnaires went to all cooperatives in these States that (1) received Grade A

milk, manufacturing grade milk or farm-separated cream or both and (2) received only ungraded milk or ungraded milk and farm-separated cream but had fluid market outlets.

From Grade A cooperatives -- those handling Grade A milk -- data were obtained on reasons for adding Grade A, problems encountered, number and type of farmer-patrons, primary manufacturing operations, volume of output, and other facts giving a comprehensive picture of development, present status, and trends in Grade A fluid milk handling.



Dairy manufacturing cooperatives are optimistic about future Grade A fluid sales. Growing numbers of school children are drinking more Grade A milk as a result of Federal assistance through School Milk Program.

Information was collected from ungraded milk marketing organizations -- those marketing ungraded fluid milk -- to round out data on overall marketing of fluid milk by dairy manufacturing cooperatives and to determine similarities and differences between Grade A and ungraded fluid milk cooperatives. Of the associations that supplied data, 34 were in Minnesota and 9 in Iowa. A postal card inquiry indicated four dairy

manufacturing cooperatives in Wisconsin were marketing ungraded fluid milk in 1956, but none of these responded to mail questionnaires.

This report is limited to a presentation of statistical data with brief comments on significant findings. Marketing conditions remained about the same in 1958 and early 1959 as in 1957. Therefore conclusions based on information obtained in 1957 were believed to be still valid.

Current Role of Cooperatives

The 124 reporting cooperatives represented 16,780 farmer-patrons shipping milk qualified for fluid use. The 81 that marketed Grade A fluid milk furnished information on 12,635 Grade A patrons, while the 43 cooperatives selling ungraded fluid milk represented 4,145 shippers.

In 1956, dairy manufacturing cooperatives marketing Grade A milk in this area received 44 percent of their total butterfat in Grade A milk, 49 percent in manufacturing grade milk, and only 6 percent in farm-separated cream.

Location and Size

Figure 1 shows the locations of dairy manufacturing cooperatives in the tri-State area of Minnesota, Wisconsin, and Iowa that were marketing fluid milk in 1956.

The size of these cooperatives ranged from those receiving 2 or 3 million pounds of milk equivalent annually to those handling over 200 million pounds. Because of wide variation in size of reporting cooperatives, median values were used in making comparisons. The median means the mid-point value where half the cooperatives fall above and half below.

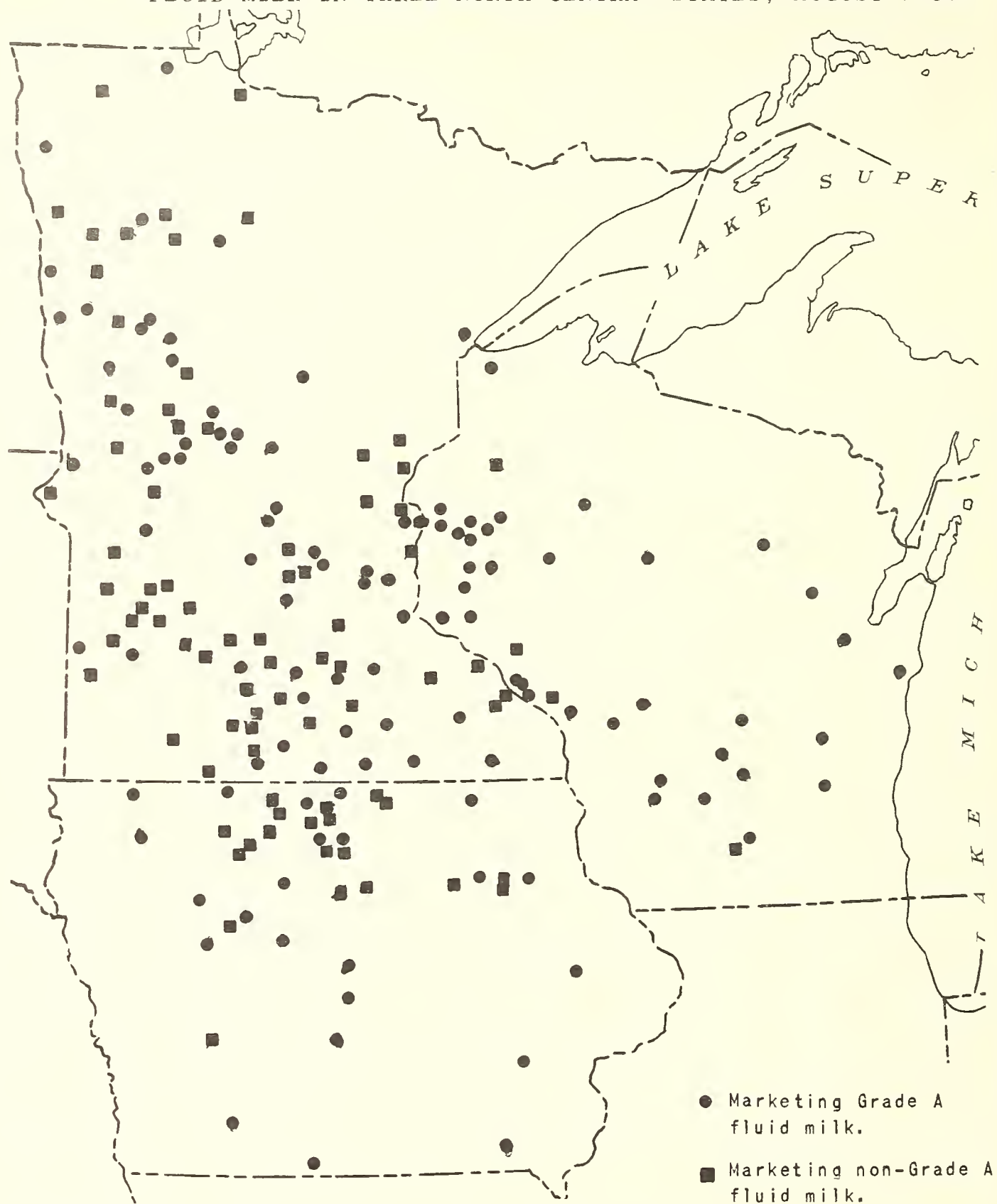
Some of the largest dairy manufacturing cooperatives in the United

States are located in this three-State area, but small cooperatives greatly outnumber large ones. In Iowa, half the dairy manufacturing cooperatives with a Grade A fluid milk operation had an annual intake (all grades) of more than 34.6 million pounds of milk equivalent, and half had annual receipts below this figure. This annual intake included butterfat receipts from other dairy firms as well as receipts direct from farmer-patrons.

In Wisconsin, average size of reporting cooperatives was much greater, and their annual intake of butterfat from all sources amounted to a median value of 87.7 million pounds of milk equivalent. Cooperatives reporting from Minnesota outnumbered those reporting from the other two States but averaged the smallest in size. The mid-point value of these cooperatives was 20.6 million pounds annual intake of milk equivalent.

A few figures on average volumes, rather than median figures, will further amplify overall industry importance of large-volume firms -- those handling 100 million, 200 million, or more pounds a year. In the three-State area, average size of 79 reporting cooperatives, based on the 1956 annual intake of butterfat from all sources, was 73.6 million pounds of milk equivalent as compared to the median quantity of 32.9 million

Figure 1. LOCATIONS OF DAIRY MANUFACTURING COOPERATIVES MARKETING FLUID MILK IN THREE NORTH CENTRAL STATES, AUGUST 1957.



pounds. This difference of 41 million pounds resulted from the extreme range between smallest and largest cooperatives and the effect of largest cooperatives on the average. Under these conditions, averages are misleading and median values mean more in discussing volume data in this report.

Entry into Grade A Marketing

From 1951 to 1956, dairy manufacturing cooperatives rapidly increased Grade A fluid milk marketing (table 1). Of 77 cooperatives reporting, 3 of 5 started handling Grade A fluid milk after January 1, 1951. The 4 peak years were 1952, 1953, 1955, and 1956 when 36 - or about 50 percent - added Grade A fluid operations.

Data for 1957 are incomplete since the questionnaire reached cooperatives early in the year.

Table 1. - *Cooperatives adding Grade A operations, 1927-57*

Year	Cooperatives	
	Number	Percent
1927-32	3	3.9
1933-38	3	3.9
1939-44	4	5.2
1945-50	19	24.7
1951-56	46	59.7
1957 ¹	2	2.6
Total ²	77	100.0

¹Data for 1957 are incomplete.

²Data not reported for four cooperatives.

In Wisconsin, Grade A marketing developed at an earlier date than in either Minnesota or Iowa. Only one-fourth of the 48 reporting cooperatives in Minnesota and Iowa were marketing Grade A fluid milk before 1951, as compared to more than half of Wisconsin's 29 reporting cooperatives.

Reasons for Adding Grade A and Its Use

When we know why dairy manufacturing cooperatives entered Grade A milk marketing, we may have a vital key to improved efficiency in handling this milk. In seeking guides, we must go back to basic causes of a problem. Table 2 clearly shows that the largest number of cooperatives in the States studied now marketing Grade A milk diversified into the fluid milk field because they believed a trend was developing toward Grade A production. Two-thirds of 79 reporting organizations felt they should adapt to this trend.

Taking a positive approach, many cooperatives added a Grade A operation because they believed it would eventually be more profitable for their farmer-patrons. They also sought to meet growing local customer demands for

Grade A bottled milk and to supply markets for bulk milk.

Other associations added Grade A milk either to prevent their farmer-patrons from shifting to Grade A handling firms or to compete with other firms buying milk in their area. We found that only a third of Iowa's cooperatives acknowledged a growing trend in handling Grade A milk, while nearly three-fourths of those in both Minnesota and Wisconsin reported such a trend.

Indicating positive reasons, three-fourths of Wisconsin's cooperatives added Grade A operations to bring increased returns to farmer-patrons. Two-fifths of the firms in Minnesota and again just a third in Iowa gave this reason. Local customer demands figured most prominently in Minnesota and Iowa's

Table 2. - *Reasons cooperatives added Grade A fluid milk operation*

Item	Minnesota	Wisconsin	Iowa	Three-State total
Number of cooperatives reporting	36	29	14	79
<i>Percent of cooperatives¹</i>				
Reasons				
To supply seasonal and emergency needs	17	34	14	23
To prevent loss of producer-patrons wanting to convert to Grade A production	33	66	21	43
To meet local customers' demands for bottled milk	75	24	64	54
Belief in trend toward Grade A milk production	75	72	36	67
To obtain higher sales price for producer-patrons' Grade A milk	44	76	36	54
To meet competition	33	52	7	35
To supply regular year-round market	3	7	7	5

¹Total exceeds 100 percent because most cooperatives gave more than one reason.

shift to Grade A marketing. Conversely, Wisconsin had the largest percentage diversifying to meet generally expanding markets for Grade A bulk milk.

Wisconsin also had the highest percentage of cooperatives adding Grade A operations as a preventive measure--both to guard against losing farmer-patrons and to meet competition from other firms.

Although milk is a highly versatile product and can be consumed in a wide variety of forms, the price for fluid uses is usually higher than the price for manufacturing uses.

Once a Grade A supply has developed and cooperative dairies feel they must, competition-wise, gear themselves to handle it, they confront the vital problem of finding adequate fluid outlets. Even when competition does not strongly prompt them to enter the Grade A field, firms find a knowledge of markets essential in helping them decide whether to expand into Grade A fluid operations. Such knowledge also becomes an important guide for farmer-patrons who

consider equipping themselves to meet Grade A standards.

Tables 3 and 4 show overall adequacy of fluid markets in the tri-State area studied. From a 4-month average (table 3), we discovered that about 50 percent of the Grade A butterfat -- approximately 2.5 billion pounds -- received by reporting associations, never reached fluid outlets but had to be manufactured instead. Table 3 gives the detailed use by States.

While Wisconsin's manufacturing cooperatives received approximately 75 percent of all Grade A milk shipped to reporting associations in the tri-State area for the 4 months analyzed, they were able to channel only half of this Grade A into fluid outlets. The picture was brighter in Minnesota and Iowa. Seventy percent of the Grade A butterfat obtained by dairy manufacturing cooperatives in those States went to fluid markets.

The major fluid outlet for Grade A milk in the three-State area was bulk milk sales to fluid milk distributors,

Table 3. - Volume of Grade A butterfat marketed in fluid outlets and manufactured products for selected months, 1956

Utilization ¹	February			May			August			November			Four-month average		
	Butterfat use	Percent	1,000 pounds	Butterfat use	Percent	1,000 pounds	Butterfat use	Percent	1,000 pounds	Butterfat use	Percent	1,000 pounds	Butterfat use	Percent	1,000 pounds
Minnesota															
Fluid use²															
Bulk milk shipments	118	22.1		101	18.9		154	28.8		160	30.0		133	24.9	
Bulk cream shipments	2	0.4		5	0.9		8	1.5		2	0.4		4	0.8	
Bottled milk and cream	205	38.4		198	37.1		261	48.9		236	44.1		225	42.1	
All fluid uses	325	60.9		304	56.9		423	79.2		398	74.5		362	67.8	
Manufacturing use ²	209	39.1		230	43.1		111	20.8		136	25.5		172	32.2	
Total ³	534	100.0		534	100.0		534	100.0		534	100.0		534	100.0	
Wisconsin															
Fluid use²															
Bulk milk shipments	619	14.6		405	9.5		1,352	31.8		1,846	43.5		1,056	24.9	
Bulk cream shipments	715	16.8		886	20.9		572	13.5		773	18.2		736	17.3	
Bottled milk and cream	263	6.2		241	5.7		384	9.1		316	7.4		301	7.1	
All fluid uses	1,597	37.6		1,532	36.1		2,308	54.4		2,935	69.1		2,093	49.3	
Manufacturing use ²	2,649	62.4		2,714	63.9		1,938	45.6		1,311	30.9		2,153	50.7	
Total ⁴	4,246	100.0		4,246	100.0		4,246	100.0		4,246	100.0		4,246	100.0	
Iowa															
Fluid use²															
Bulk milk shipments	425	55.7		389	51.0		528	69.2		561	73.5		476	62.4	
Bulk cream shipments	59	7.7		29	3.8		59	7.7		88	11.5		59	7.7	
Bottled milk and cream	24	3.2		22	2.9		31	4.1		24	3.2		25	3.3	
All fluid uses	508	66.6		440	57.7		618	81.0		673	88.2		560	73.4	
Manufacturing use ²	255	33.4		323	42.3		145	19.0		90	11.8		203	26.6	
Total ⁵	763	100.0		763	100.0		763	100.0		763	100.0		763	100.0	
Tri-State area															
Fluid use															
Bulk milk shipments	1,162	21.0		895	16.2		2,034	36.7		2,567	46.3		1,665	30.0	
Bulk cream shipments	776	13.9		920	16.6		639	11.5		863	15.6		799	14.4	
Bottled milk and cream	492	8.9		461	8.3		676	12.2		576	10.4		551	10.0	
All fluid uses	2,430	43.8		2,276	41.1		3,349	60.4		4,006	72.3		3,015	54.4	
Manufacturing use	3,113	56.2		3,267	58.9		2,194	39.6		1,537	27.7		2,528	45.6	
Total	5,543	100.0		5,543	100.0		5,543	100.0		5,543	100.0		5,543	100.0	

¹Data on utilization of Grade A butterfat were received as percentage figures for selected months.²The pounds of butterfat indicated in fluid and manufacturing uses are weighted averages. These were calculated by multiplying average monthly Grade A milk receipts per cooperative by percentage utilization figures reported by each cooperative for selected months.³Average monthly Grade A butterfat receipts of 25 dairy manufacturing cooperatives.⁴Average monthly Grade A butterfat receipts of 25 dairy manufacturing cooperatives.⁵Average monthly Grade A butterfat receipts of 13 dairy manufacturing cooperatives.

Table 4. - *Percentage of Grade A butterfat used by cooperatives in fluid outlets during selected months, 1956.*

Used in fluid outlets	Cooperatives									
	February		May		August		November		4-month average	
Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Less than 20	14	22.2	22	35.0	9	14.2	5	7.9	12	19.0
20 - 39	9	14.2	6	9.5	7	11.2	6	9.5	7	11.2
40 - 59	12	19.0	9	14.2	6	9.5	7	11.2	9	14.2
60 - 79	11	17.6	14	22.3	7	11.2	13	20.6	11	17.6
80 and over	17	27.0	12	19.0	34	53.9	32	50.8	24	38.0
Total ¹	63	100.0	63	100.0	63	100.0	63	100.0	63	100.0

¹Data not reported by 18 cooperatives.

accounting for over half the milk that went into fluid uses. Next in importance were bulk cream shipments, composing 27 percent. Bottled milk and cream sales accounted for the remaining 18 percent.

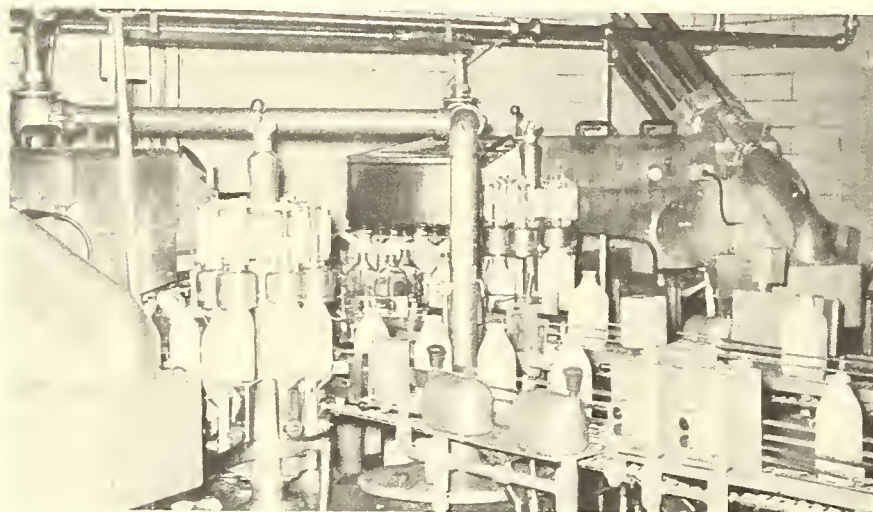
Only in Minnesota do we find bottled milk and cream sales the main fluid market for Grade A milk. This outlet absorbed nearly two-thirds of the Grade A that went into fluid use.

The chief fluid outlet in Wisconsin and Iowa was for bulk milk. An unusual aspect of Wisconsin markets was that

shipments of bulk cream accounted for a third of the Grade A fluid sales, making this a major market in that State.

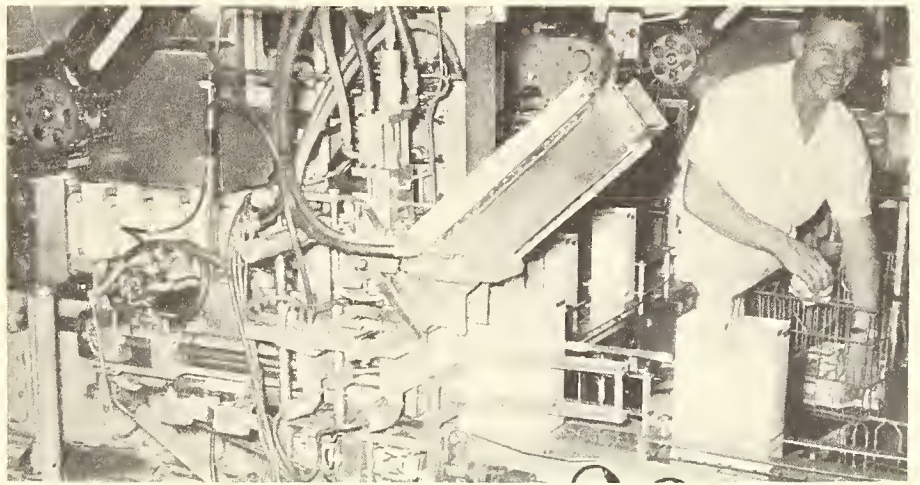
While milk production fluctuates throughout the year, demand remains more uniform with gradual variations. Each dairy product has its own demand pattern, causing ever-changing competition among the many uses for milk.

In table 4, we find over half the cooperatives reporting were able to sell 80 percent or more of their Grade A butterfat in fluid outlets in August and November, the months of seasonally low



Bottling milk and cream account for only 18 percent of the fluid Grade A milk sales. Manufacturing co-ops are switching from glass bottling ...

... to paper packaging.



production. Fluid outlets were less ample in February and May than in August and November. In February, only 1 in 4 cooperatives found fluid outlets for as much as 80 percent of their Grade A milk, and in the flush production month of May only 1 in 5 could report this high utilization.

During the 4 months analyzed, only about 2 of 5 cooperatives averaged 80 percent or more fluid use of Grade A

milk. About a third sold between 40 and 80 percent in fluid markets, while the remaining 30 percent averaged less.

Judging from the large number of cooperatives -- nearly a third -- unable to market even 40 percent of their Grade A milk in fluid outlets, we must conclude that Grade A marketing opportunities require more thorough investigation before additional manufacturing concerns diversify into such fluid handling.

Characteristics of Plants

Concerning the principal Grade A function of cooperative manufacturing plants, we found the number of plants that had added the wholesaling of bulk milk to their manufacturing operations almost equalled the number bottling milk as a sideline (figure 2). Data on these different combinations begin to give insight into operating problems and some costs that Grade A may introduce.

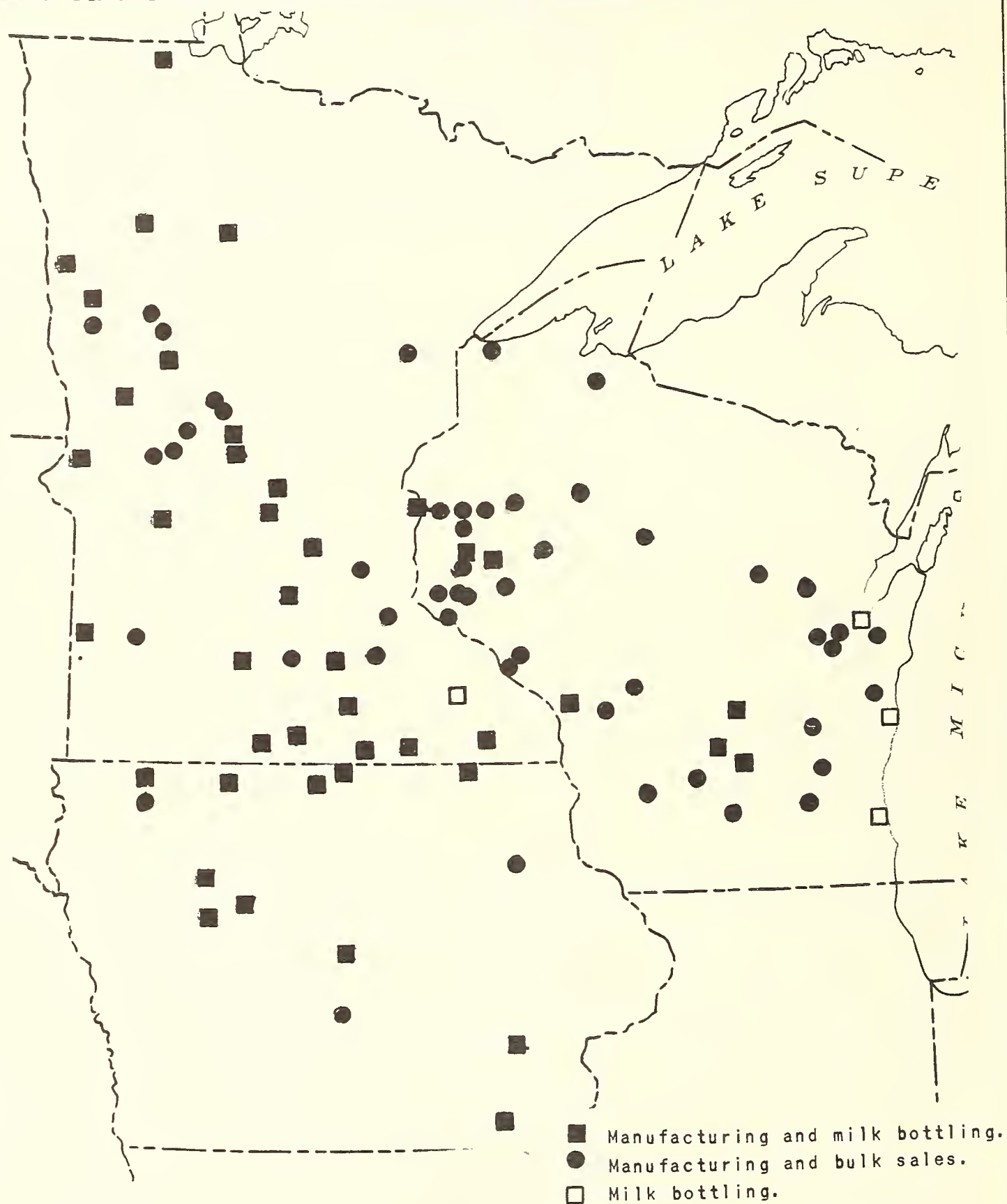
The 81 cooperative firms included in the survey had 96 plants. Of these, 44 combined bottling and manufacturing, while 43 joined bulk sales of milk or cream, or both with manufacturing; 5 plants were Grade A receiving stations only, and 4 were bottling plants only.

From Minnesota, 37 cooperatives reported 40 plants with 25 both bottling and manufacturing, 14 manufacturing

and bulk sales, and 1 bottling alone. Wisconsin's 30 cooperatives had 42 plants with 26 manufacturing and bulk, 8 both bottling and manufacturing, 5 receiving stations, and 3 bottling alone.

Thus in Minnesota and Iowa, the largest number of plants both bottled and manufactured milk -- 3 of 5 in Minnesota and almost 4 of 5 in Iowa. The remaining two-fifths in Minnesota were either manufacturing plants selling bulk milk, or receiving stations. Iowa's remaining one-fifth manufactured milk products and sold bulk milk for fluid use. In Wisconsin, two-thirds of the manufacturing plants sold bulk milk or cream, or both. Only 1 plant in 5 bottled milk, contrasting sharply with the prevalence of bottling in Minnesota and Iowa.

Figure 2. TYPES AND LOCATIONS OF PLANTS RECEIVING GRADE A FLUID MILK FROM FARMER-PATRONS REPORTED BY MANUFACTURING COOPERATIVES.



Manufacturing Operations

Managers of dairy manufacturing cooperatives frequently want to know how far they should diversify plant operations. Historically, production of manufactured dairy products in the United States has been carried on in specialized plants, but today we find a trend toward multiproduct plants.

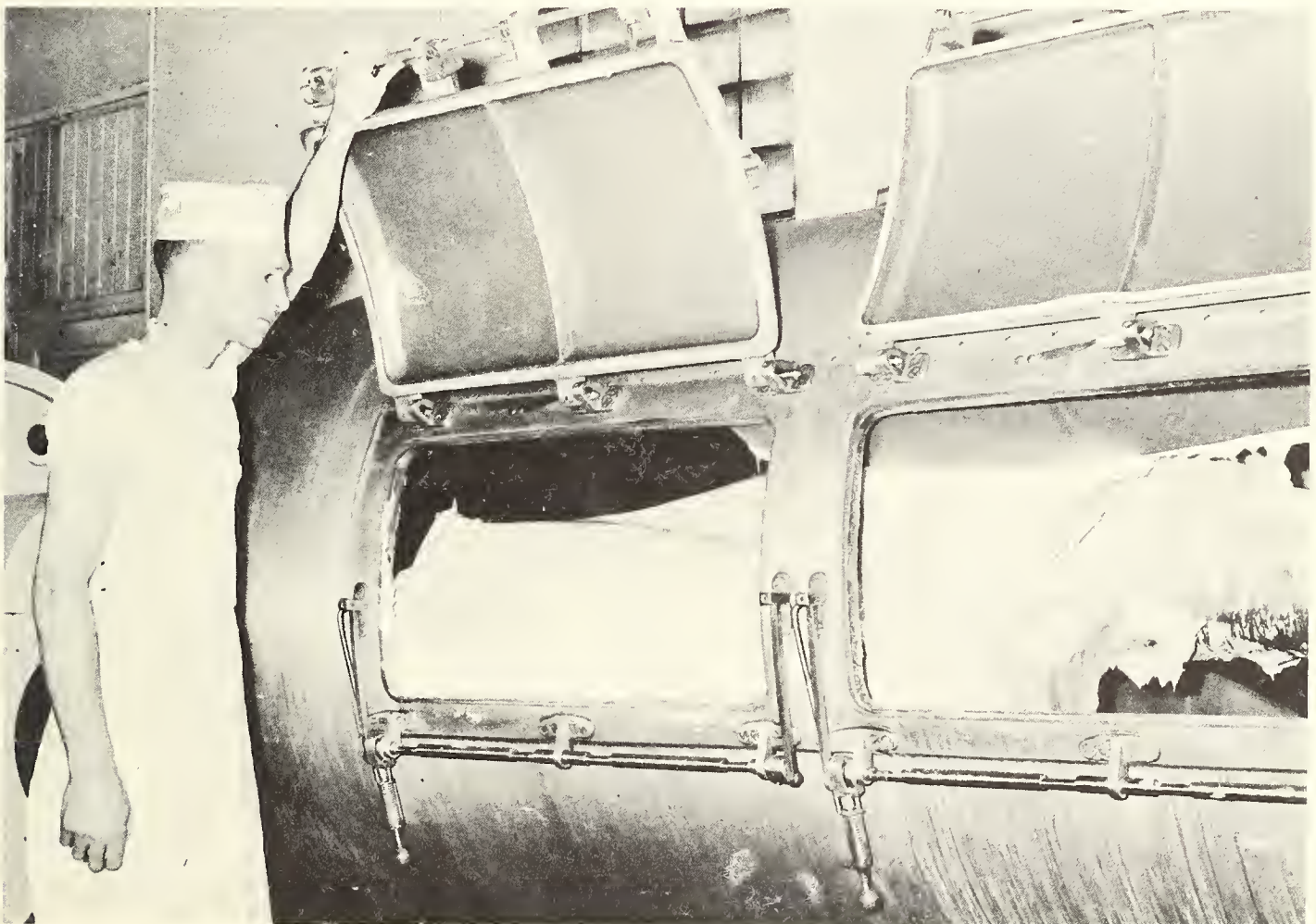
Dairy marketing research provides no inflexible do's and don'ts on diversification into Grade A fluid handling. Problems such as pricing, markets, and quality standards, differ from firm to firm. Each association must evaluate its own situation. However, one useful guide for management is information

such as given in this study on present diversification within the area.

Primary Operations

Butter was listed by nearly all reporting cooperatives as a primary manufacturing operation (table 5). About half designated spray nonfat dry milk. Ranking next in frequency were ice cream and roller nonfat dry milk.

Greatest diversification in manufactured products prevailed in cooperatives receiving largest volumes of Grade A milk. The large-volume Grade A firms were located principally in Wisconsin, as shown in table 6. In



Butter was a primary manufactured product of almost all associations. Surplus or reserve Grade A butterfat was made into butter when fluid outlets were inadequate.

Table 5. - *Intake of Grade A milk and type of products manufactured by cooperatives, 1956*

Item	Yearly Grade A intake per cooperative in million pounds ¹					All volume groups
	Under 3	3-11.9	12-20.9	21-30	Over 30	
Number of cooperatives in each volume group	31	21	5	7	15	² 79
<i>Percent of total cooperatives in each volume group</i>						
Product manufactured						
Dry buttermilk	3	-	-	14	7	4
American cheese	-	14	-	29	20	10
All other cheese	6	9	-	29	13	10
Nonfat dry milk:						
Roller	-	19	40	-	13	14
Spray	3	43	100	57	100	43
Butter	100	67	100	71	100	89
Ice cream mix and/or ice cream	19	5	20	-	40	18
Condensed and evaporated milk	3	9	-	-	40	11
Other condensed products	-	-	-	-	13	3
Dry whole milk	-	-	-	29	20	6

¹1956 Grade A butterfat receipts converted to 3.5 percent milk equivalent.

²Excludes two cooperatives that started handling Grade A milk in 1957.

1956, 40 percent of Wisconsin cooperatives reported receiving 30 million or more pounds of Grade A milk.

Smallest Grade A intakes were found in firms primarily manufacturing butter. They were located mostly in Minnesota and Iowa, where 90 percent and 80 percent, respectively, of the cooperatives received less than 12 million pounds of Grade A milk.

In 1956, total butterfat receipts from all sources amounted to 203.6 million pounds, or about 5,817 million pounds of 3.5 percent milk (table 7). The main source of raw material was direct shipments of whole milk from producer-patrons, which made up 87 percent of total butterfat receipts. The smallest manufacturing cooperatives, with less than 20 million pounds of milk equivalent

Table 6. - *Reporting cooperatives classified by volume of Grade A milk intake, 1956*

Grade A milk intake per cooperative ¹	Minnesota	Iowa	Wisconsin	Three-State total ²
<i>Million pounds</i>				
Less than 3	21	8	2	31
3-11.9	11	3	7	21
12-20.9	1	2	2	5
21-29.9	0	0	7	7
30 and over	3	1	11	15
Total	36	14	29	79

¹1956 Grade A butterfat receipts converted to 3.5 percent milk equivalent.

²Excludes two cooperatives that started handling Grade A milk in 1957.

Table 7. - Volume and classification of milk and cream intake from all sources, 1956

Volume of milk received per cooperative ¹	Total		Percentage received in form of				
	Cooperatives reporting	Milk and cream received from all sources ¹	Grade A milk	Manufacturing milk	Farm-separated cream	Factory-separated cream	Total
<i>Million pounds</i>	<i>Number</i>	<i>Million pounds</i>	<i>Percent</i>				
Less than 20	24	252.6	11.6	55.2	32.8	0.4	100
20 - 39.9	21	591.6	21.0	66.2	12.8	-	100
40 - 59.9	7	338.8	23.0	66.1	10.9	-	100
60 - 79.9	4	283.8	18.5	68.7	12.8	-	100
80 - 99.9	5	439.2	25.4	60.0	5.8	8.8	100
100 - 119.9	5	563.4	38.1	59.0	2.9	-	100
120 - 139.9	4	499.6	41.2	54.8	4.0	-	100
140 and over	9	2,847.9	61.6	36.4	2.0	-	100
Total or average	79	5,816.9	44.2	49.1	6.0	0.7	100

¹1956 butterfat receipts converted to 3.5 percent milk equivalent.

intake, still received approximately one-third of their butterfat supply as farm-separated cream. However, all farm-separated cream shipments to manufacturing cooperatives with Grade A fluid milk operations accounted for only 6 percent of total butterfat receipts.

Supplemental Supplies

These manufacturing cooperatives did not receive all their raw material

inputs, such as Grade A and ungraded or manufacturing grade milk, farm-separated cream, and skim milk, directly from farmer-patrons.

For example, 26 cooperatives received skim milk from other firms (table 8). None of these cooperatives could be classified as small. A 21-million-pound annual milk intake was the least volume reported. In the largest volume group, six cooperatives accounted for more than half the total skim milk

Table 8. - Relationship between size of cooperatives and volume of skim milk received from other dairy firms, 1956

Volume of milk received per cooperative ¹	Received skim milk from other firms			
	Cooperatives reporting		Average volume received	
<i>Million pounds</i>	<i>Number</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent of total</i>
Less than 20	None	-	-	-
20 - 59.9	6	23.1	6.0	10.2
60 - 99.9	9	34.6	12.0	30.7
100 - 139.9	5	19.2	7.3	10.4
140 and over	6	23.1	28.7	48.7
All cooperatives	26	100.0	13.6	100.0

¹1956 butterfat intake converted to 3.5 percent milk equivalent.



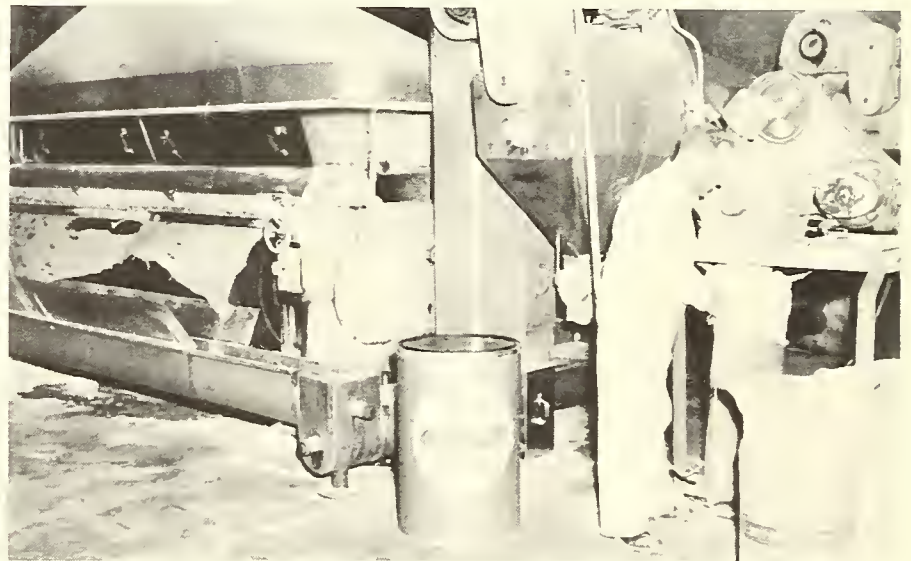
About half the cooperatives manufactured non-fat dry milk from surplus Grade A. Here milk is sprayed for drying in heated chambers of spray drier.

received from other dairy firms.

Complete data showed that volume of skim milk obtained from other firms affected the size of manufacturing operations of cooperatives producing a total of 4 million pounds or more of manufactured products. Only 3 in 17, producing from 1 to 4 million pounds, reported re-

ceiving skim milk from other firms. Of 32 concerns producing over 4 million pounds, 23 reported getting skim milk from other firms.

Data used in preparing table 7 showed that only 2 percent of Grade A milk, 11 percent of manufacturing milk, and 8 percent of farm-separated cream



Less frequently used was the roller process of drying non-fat milk.

came from other than direct shipments by producer-patrons. Factory-separated cream, a minor source of supply, furnished about 1 percent of total butterfat receipts.

Grade A Fluid Operations

At the start of Grade A handling, 3 of 4 cooperatives reported performing only 1 function - marketing bulk milk or bulk cream or bottled milk products (table 9). Of the total number of cooperatives, 17 percent combined 2 functions and only 5 percent initiated all 3 Grade A operations simultaneously (bulk milk, bulk cream, and bottled milk products).

By 1956, however, the number of associations performing only one Grade A function had decreased 21 percent. The number of cooperatives handling both bulk milk and bottled milk

products had tripled, and cooperatives using all three Grade A operations had doubled. A total of 56 cooperatives were marketing bulk milk; 16 marketed bulk cream, and 47 bottled milk products.

In Minnesota and Iowa, over half the cooperatives began handling Grade A milk by bottling milk products. In 1956, this was still the main Grade A operation of 1 in 3 Minnesota cooperatives and 1 in 2 in Iowa. Bulk milk marketing, however, was and is the primary Grade A function of over half Wisconsin's dairy manufacturing cooperatives.

As table 10 shows, dairy manufacturing cooperatives have, since initiating Grade A bottling, switched their emphasis from glass to paper containers. Three of 5 cooperatives bottling milk used only 1 type of container -- paper or glass -- at the start of milk bottling. About 2 of 5 used 2 types of containers,

Table 9. - *Cooperatives classified by type of operation at start of Grade A fluid milk handling and in 1956*

State	Type of Grade A marketing operation						Cooperatives reporting
	Bulk milk	Bulk cream	Bottled milk products	Bulk milk, and bottled milk products	Bulk milk, bulk cream, and bottled milk products	Bulk milk and bulk cream	
<i>Percent of cooperatives</i>							<i>Number</i>
Minnesota							
At start	19.4	-	64.0	8.3	-	8.3	¹ 36
In 1956	22.2	-	33.3	25.0	13.9	5.6	
Wisconsin							
At start	62.2	3.4	10.3	3.4	6.9	13.8	² 29
In 1956	51.9	3.4	10.3	13.8	10.3	10.3	
Iowa							
At start	14.3	-	50.0	7.1	14.3	14.3	14
In 1956	14.3	-	50.0	21.5	7.1	7.1	
Three-State total							
At start	34.2	1.3	41.8	6.3	5.0	11.4	79
In 1956	31.6	1.3	27.8	20.3	11.4	7.6	

¹Excludes one cooperative firm that started Grade A bottling operation in February 1957.

²Excludes one cooperative firm that started Grade A bulk milk operation in July 1957.

Table 10. - Containers used by cooperatives packaging Grade A milk products at start and in 1956

Container	At start	In 1956
<i>Percent of cooperatives</i>		
Glass	42.8	12.8
Paper	16.7	25.5
Glass and paper	33.3	51.1
Glass, paper, and dispenser cans	2.4	6.4
Paper and dispenser cans	2.4	2.1
Glass and dispenser cans	2.4	2.1
Total number of cooperatives bottling milk products	42	47

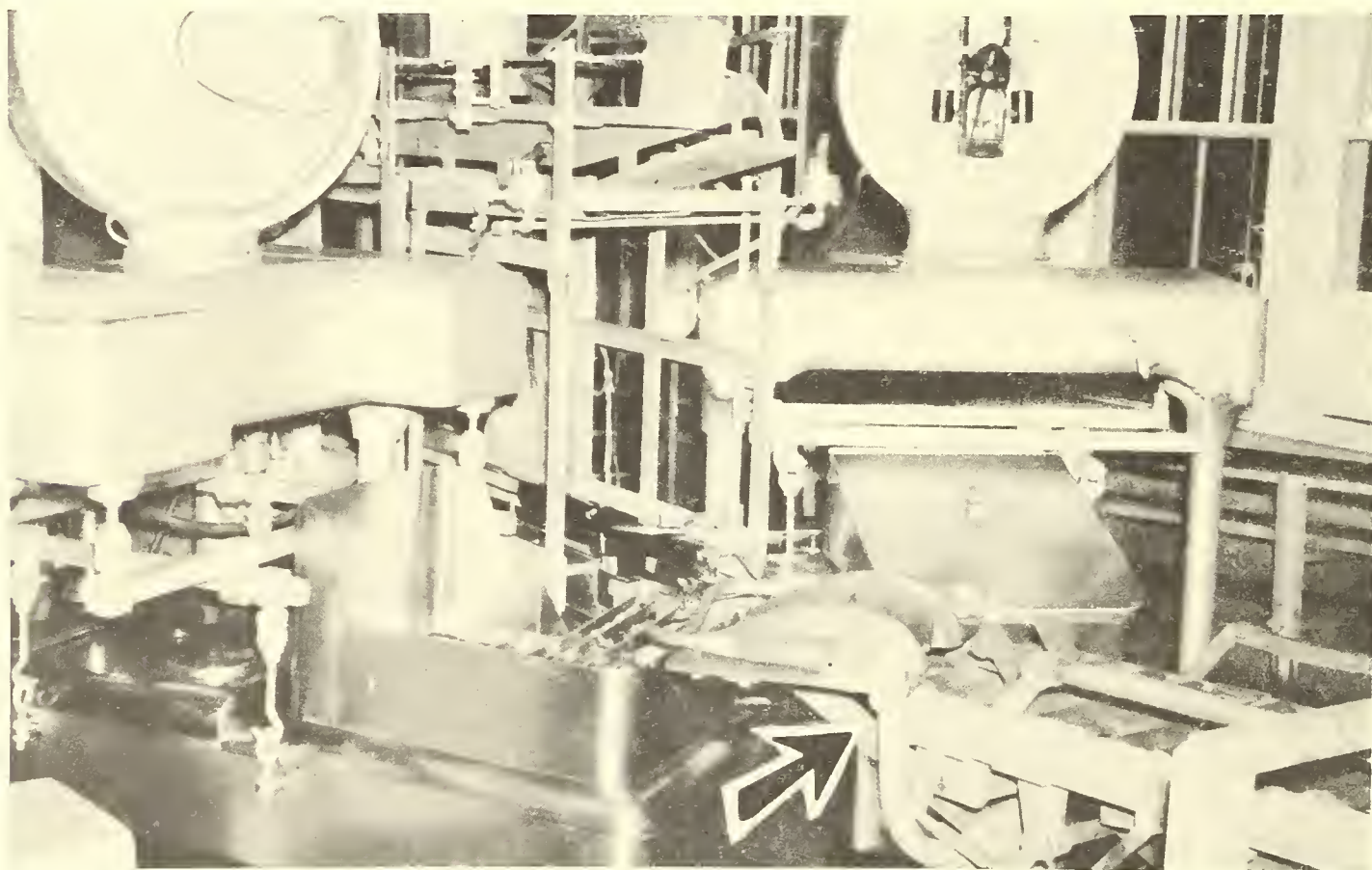
while only 1 of 42 used 3 types at the beginning. The number of cooperatives that bottled milk increased by 12 percent in 1956, and over half of them used a

combination of paper and glass containers. Cooperatives using only glass had decreased in number by two-thirds, but those using only paper showed an increase of 71 percent. Having expanded their use of dispenser cans, by 1956 twice as many cooperatives were using cans with paper or glass containers or both.

Receiving Practices

Of 96 plants reporting types of receiving facilities, over two-thirds received Grade A milk and manufacturing grade milk through separate intakes. Although the remaining plants used the same intake for both grades, one-half had separate or divided weigh tanks for the Grade A milk (table 11).

Looking at different kinds of plants, we find about 9 of 10 manufacturing



A Y-dump system like this one, used by many co-ops, is one of the more inexpensive ways of handling Grade A and manufacturing grade milk separately. The gravity conveyer at lower right receives both Grade A and manufacturing grade milk. By moving the dump bar, marked by the arrow, an operator may empty can of milk into the proper weigh tank.

Table 11. - Receiving facilities used by cooperatives marketing Grade A fluid milk

Type of plant receiving Grade A milk	Number of plants with			Total plants
	Separate intakes for Grade A and manufacturing milk	Same intake, using		
		Same weigh tank	Separate weigh tanks	
Minnesota				
Manufacturing	11	2	1	14
Milk bottling and manufacturing	13	6	6	25
Milk bottling	1	-	-	1
Receiving station	-	-	-	-
Total plants	25	8	7	40
Wisconsin				
Manufacturing	24	-	2	26
Milk bottling and manufacturing	5	-	3	8
Milk bottling	3	-	-	3
Receiving station	5	-	-	5
Total plants	37	-	5	42
Iowa				
Manufacturing	2	-	1	3
Milk bottling and manufacturing	4	6	1	11
Milk bottling	-	-	-	-
Receiving station	-	-	-	-
Total plants	6	6	2	14
Three-State total				
Manufacturing	37	2	4	43
Milk bottling and manufacturing	22	12	10	44
Milk bottling	4	-	-	4
Receiving station	5	-	-	5
Total plants	68	14	14	96

plants selling bulk milk separated their receiving facilities, as compared to 5 of 10 plants combining bottling and manufacturing. Of the remaining plants using the same intake for both grades, two-thirds of the manufacturing plants used a Y-dump³ compared to about half the plants combining bottling and manufacturing.

Federal recommendations, and State regulations or city ordinances or both, plus economic factors, largely determined kind of intake system. While most plants had separate receiving lines for Grade A and manufacturing grade milk, some found it more feasible to use exactly the same intake system for both grades.

Wisconsin forbids this practice, but one-fifth of Minnesota's plants and two-fifths of Iowa's used the same weigh tank for both grades. In this case, State law and many city milk ordinances required that "...no milk or milk products shall be permitted to come in contact with equipment with which a lower grade of milk or milk products has been in contact, unless the equipment first has

been cleaned thoroughly and subjected to such bactericidal treatment."⁴

Wisconsin requires that "no milk plant ... participating in this (Grade A) program shall ... receive and/or process any ungraded or lower grade milk or milk products unless it shall have at least the following equipment ... :

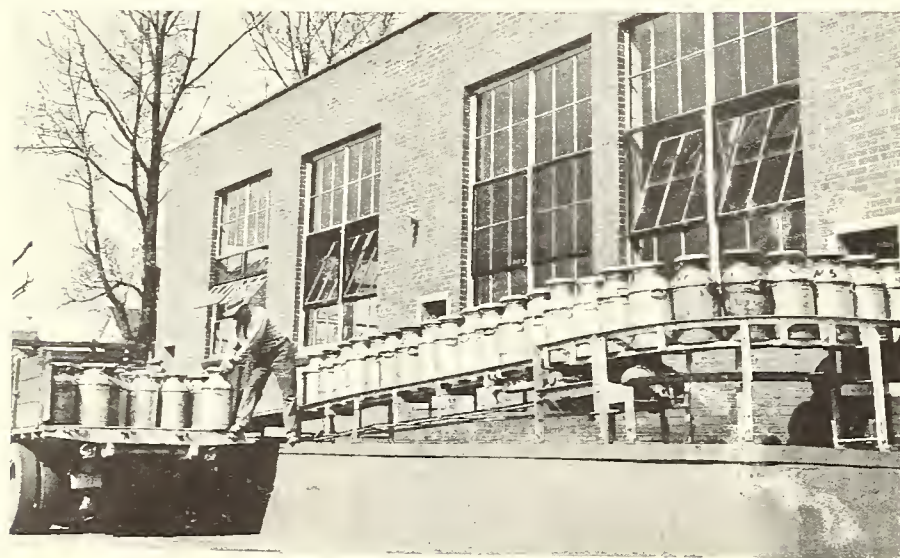
"(1) A separate weigh can ..., or a divided can, part of which is used only for the ungraded or lower grade milk and milk products ..."⁵

Of 42 Wisconsin plants, 37 used entirely separate intakes. Of 8 plants combining bottling and manufacturing, 3 did not have entirely separate weigh cans. Use of the same weigh can was most common in Iowa, especially among plants that combined bottling and manufacturing, with 6 of 11 cases. In Minnesota, 25 of 40 plants had separate intakes, 8 plants had the same receiving facilities, and 7 plants had the same intake with a Y-dump.

³Term often used by plant managers to describe receiving facilities with separate or divided weigh can assembly.

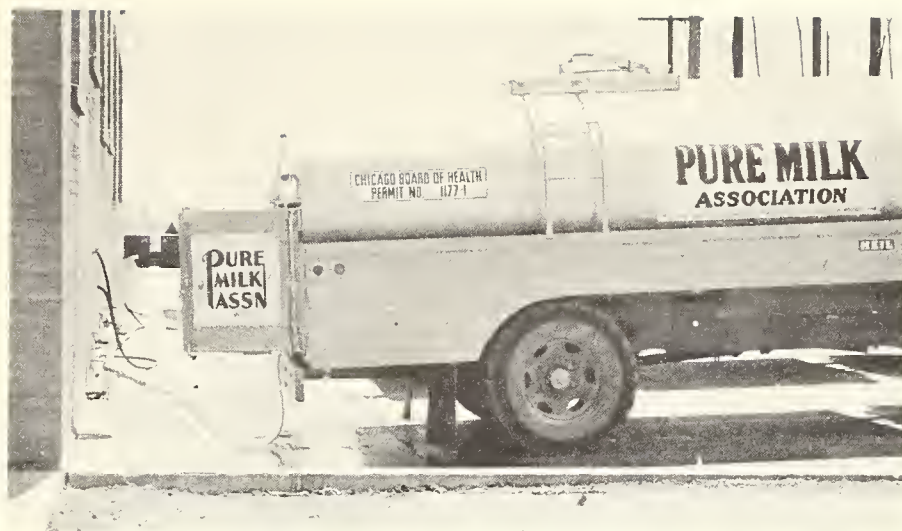
⁴State of Minnesota, Department of Agriculture, Dairy and Food, "A Regulation Prescribing Minimum Standards for the Production, Processing, Distribution, and Sale of Grade A Milk and Grade A Milk Products," 1952, p. 24. Similar regulations apply in Iowa.

⁵Wisconsin State Department of Agriculture, "Regulations for the Production, Processing, Distribution, and Sale of Grade A Milk and Grade A Milk Products," Special Bulletin No. 36, effective Nov. 15, 1953, p. 23.



Can intake systems entail much more labor than do bulk receiving methods ...

... like these bulk pickup tankers unloading milk.



Wisconsin's Grade A regulations based on the U.S. Public Health Service Recommended Milk Ordinance and Code, 1953 edition, recommended that in the future all dairies and milk plants, either being constructed or undergoing extensive alteration, have separate facilities for handling Grade A milk.

From these data, we may conclude that the trend is definitely toward separate intakes.

Comparative costs of equipment required for these receiving facilities greatly affect feasibility of adding Grade A sidelines. An entirely separate intake, including such equipment as scales, dump can, and can washer is costly. Those plants able to use the

same equipment, or which have added little, have minimized additional cost. Considering the trend toward more stringent sanitary regulations, however, a plant probably should not consider diversifying into Grade A unless it installs an entirely separate intake. Separate weigh tanks are the minimum.

Because of cost of a separate can intake, it should not be considered for handling Grade A unless volume is substantial. Bulk handling is more feasible than can handling for small volumes of milk. The trend toward bulk handling of Grade A milk is so far along that investment in a new can receiving setup, regardless of volume, must be seriously questioned.

Characteristics of Farmer-Patrons

According to reporting dairy manufacturing cooperatives, output of Grade A milk producers was large -- averaging nearly twice the daily output of manufacturing milk producers and more than 4 times the average daily output of farm-separated cream shippers (table 12). Although Grade A farmers led in daily output, they were outnumbered 2 to 1 by manufacturing milk producers. Significantly, each group of producers

shipped approximately the same annual volume of milk.⁶

Wisconsin alone had over half the Grade A producers and 60 percent of the total Grade A milk handled by reporting cooperatives. Hardly any farm-

⁶Strictly Grade A organizations and strictly manufacturing concerns were not included in this survey; also, these figures have nothing to do with the proportions of total Grade A and of ungraded milk produced in the three States as a whole.

Table 12. - *Producer-patrons classified by number shipping, volume of annual shipments, and volume shipped per day 1956*

Item	Minnesota	Wisconsin	Iowa	Three-State total
<i>Number</i>				
Dairy manufacturing cooperatives reporting	35	30	14	79
Number of patrons shipping				
Grade A milk	3,614	7,434	1,526	12,574
Manufacturing milk	6,833	13,443	4,632	24,908
Farm-separated cream	3,020	57	3,452	6,529
Total	13,467	20,934	9,610	44,011
<i>Million pounds</i>				
Annual volume shipped ¹				
Grade A milk	772.4	1,502.2	261.4	2,536.0
Manufacturing milk	723.1	1,454.3	362.3	2,539.7
Farm-separated cream	155.5	6.7	162.0	324.2
Total	1,651.0	2,963.2	785.7	5,399.9
<i>Pounds</i>				
Volume per patron per day				
Grade A milk	585	554	464	553
Manufacturing milk	290	296	214	279
Farm-separated cream	141	319	129	136
All patrons	336	388	224	336

¹1956 butterfat intake converted to 3.5 percent milk equivalent.

separated cream -- less than 1 percent -- came from Wisconsin patrons.

Only 27 percent, 36 percent, and 16 percent, respectively, of all farmers shipping milk to reporting cooperatives in Minnesota, Wisconsin, and Iowa were Grade A milk producers. However, they accounted for 47 percent, 51 percent, and 33 percent, respectively, of total butterfat received.

Type Patrons by Cooperative

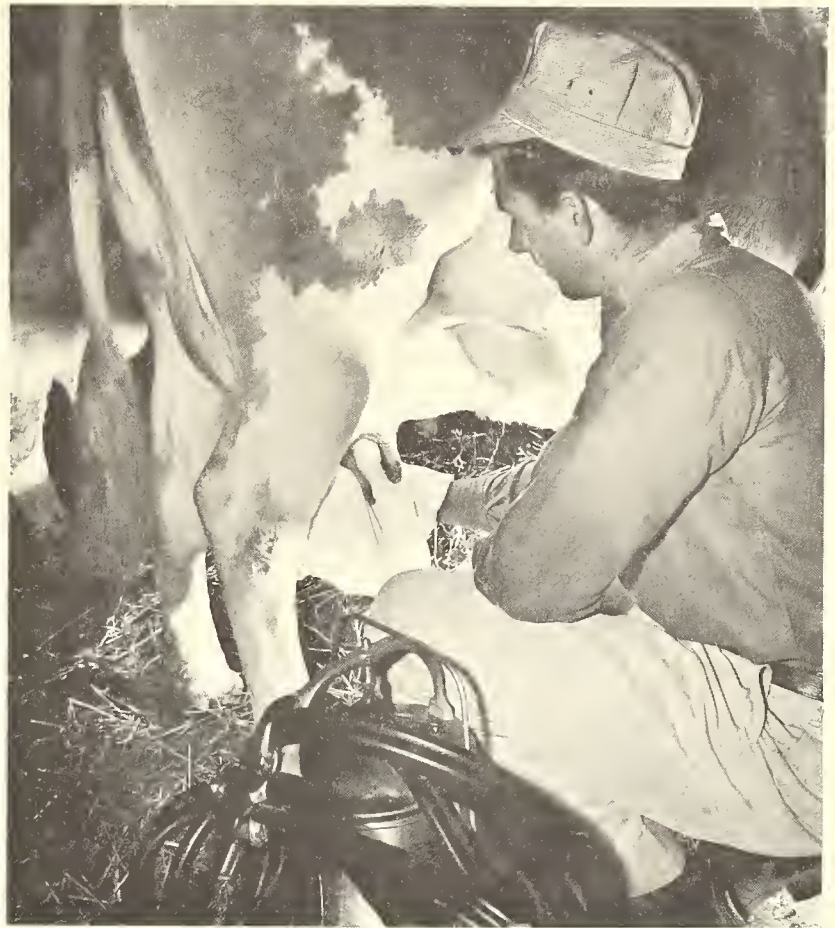
Dairy manufacturing cooperatives with large memberships generally had a high proportion of Grade A producers (table 13). This percentage usually

declined as the number of patrons per cooperative grew smaller.

Over half the cooperatives reporting had less than 400 patrons each. Of these, 61 percent produced manufacturing grade milk. Only 10 percent shipped Grade A milk. A larger number of these producers -- 29 percent -- shipped farm-separated cream.

Most of the small firms, with minor Grade A sidelines, were located in Minnesota; a few were in Iowa. In Grade A handling, they mainly bottled milk for local use. It seems unlikely that many could justify expanding such Grade A sidelines into selling either bulk milk or bottled milk in non-local markets.

"Cow-conscious" Grade A dairy farmers, such as this young man, average twice as much milk each day as manufacturing grade milk producers. His aim is wholesome, high-quality milk, economically produced.



The 12 largest cooperatives, with 1,000 or more patrons each, included almost half -- 20,299 -- of the total number of farmer-members. Of these, 46 percent produced Grade A milk and 46 percent manufacturing milk, while only 8 percent shipped farm-separated cream.

Volume Shipped by Grades

In 1956, these same producer-patrons shipped to their cooperatives about 189 million pounds of butterfat -- equivalent to approximately 5.4 billion pounds of milk, testing 3.5 percent butterfat (table 14).

While the 46 smallest cooperatives, having less than 400 patrons each, represented 22 percent of the total producers, they received only 17 percent

of the total butterfat. The 12 largest cooperatives with 46 percent of the total producers received 55 percent of the total butterfat. This lack of proportionality between producer numbers and volume of receipts stemmed mainly from different types of producers in different size groups of cooperatives.

Large cooperatives have a higher average output per patron, because a much greater proportion of their patrons are Grade A milk producers. These producers specialize more than manufacturing grade milk or cream producers. They build the entire farm operation around their dairy enterprise. They usually have larger, better managed herds, and higher producing cows than farms producing ungraded milk or cream.

Judging the importance of a dairy manufacturing cooperative's Grade A

Table 13. - *Predominant types of producers shipping to cooperatives ranged by small, medium, and large membership*

Producer-patrons per cooperative	Total		Percentage of total number of producers shipping			
	Coopera- tives reporting	Producers served	Grade A milk	Manu- facturing milk	Farm- separated cream	Total
<i>Number</i>	<i>Number</i>		<i>Percent</i>			
Less than 200	21	2,836	13.2	54.4	32.4	100
200 - 399	25	6,985	8.7	63.8	27.5	100
400 - 599	8	3,982	17.0	63.4	19.6	100
600 - 799	9	6,194	21.2	59.4	19.4	100
800 - 999	4	3,715	9.7	89.0	1.3	100
1,000 - 1,199	4	4,336	27.4	72.4	0.2	100
1,200 and over	8	15,963	50.5	39.2	10.3	100
Total or average	79	44,011	28.6	56.6	14.8	100

operation by considering only its number of Grade A producers can be misleading, however. For example, only 10 percent of the 46 smallest cooperatives' patrons were on a Grade A inspection basis, but they produced 22 percent of these cooperatives' total butterfat receipts (tables 13 and 14). Only 29 percent of the 44,011 producers, represented by the 79 reporting dairy manufacturing cooperatives, were Grade A milk shippers, but they produced nearly half the total butterfat receipts.

Prices Paid Farmers

Dairy manufacturing cooperatives sometimes have difficulty in meeting Grade A prices paid by their competitors. When fluid market outlets cannot absorb all Grade A supplies and surplus milk must be manufactured, some manufacturing grade producers charge that returns from sales of manufacturing grade milk help pay premiums to Grade A milk producers and thus subsidize Grade A operations.

Table 14. - *Volume of milk and cream received from producer-patrons, 1956*

Producer-patrons per cooperative	Total		Percentage of total volume received in			
	Coopera- tives reporting	Volume received ¹	Grade A milk	Manu- facturing milk	Farm- separated cream	Total
<i>Number</i>	<i>Number</i>	<i>Million pounds</i>	<i>Percent</i>			
Less than 200	21	266.2	28.9	52.2	18.9	100
200 - 399	25	675.2	18.9	67.6	13.5	100
400 - 599	8	375.1	35.6	55.8	8.6	100
600 - 799	9	702.2	38.0	51.9	10.1	100
800 - 999	4	400.4	17.8	81.6	0.6	100
1,000 - 1,199	4	579.8	41.4	58.5	0.1	100
1,200 and over	8	2,401.0	67.5	29.3	3.2	100
Total or average	79	5,399.9	47.0	47.0	6.0	100

¹1956 producer butterfat intake converted to 3.5 percent milk equivalent.

To prevent such inequities, many cooperatives retain a fraction of the higher Grade A premiums paid in fall and winter, using this to supplement Grade A prices in flush supply periods.

The competitive struggle between dairy firms in the tri-State area covered in this report intensified the problem of keeping a proper price relationship between Grade A and manufacturing grade milk.

Both cooperatives and other dairy firms may try to get a competitor's manufacturing grade patrons by persuading them to convert to a Grade A inspection basis and promising higher premiums for the Grade A milk. In the cooperatives surveyed that already had more Grade A milk than they could market for fluid use, the premiums were an expensive method of attempting to hold or build patronage.

Over the 4-month period studied, reporting cooperatives paid an average premium of 51 cents for Grade A can milk (table 15). Those producers shipping bulk milk received an additional premium averaging 10 cents. Thus we see Grade A bulk shippers received, on the average, 61 cents a hundredweight more for their milk than producers of manufacturing grade can milk.

One method of determining what price relationship between Grade A and manufacturing grade milk is economically justified is to compare Grade A premiums paid by reporting cooperatives with premiums based on prices in selected Federal Milk Marketing Orders.

Table 16 shows four fluid markets under Federal regulation and indicates minimum prices milk handlers were obligated to pay farmers for Grade A

Table 15. - Average monthly prices paid to patrons for Grade A can milk, bulk milk, and manufacturing grade can milk in selected months, 1956

Prices paid	February	May	August	November	Four-month average
<i>Price per hundredweight of 3.5 percent milk</i>					
Minnesota					
Grade A bulk milk	\$3.56	\$3.59	\$3.69	\$3.69	\$3.63
Grade A can milk	3.50	3.51	3.65	3.65	3.58
Manufacturing grade can milk	3.00	3.03	3.04	3.09	3.04
Wisconsin					
Grade A bulk milk	3.51	3.59	3.77	3.79	3.67
Grade A can milk	3.38	3.46	3.62	3.65	3.53
Manufacturing grade can milk	3.01	3.06	3.09	3.15	3.08
Iowa					
Grade A bulk milk	3.72	3.62	3.89	3.80	3.76
Grade A can milk	3.68	3.60	3.71	3.74	3.68
Manufacturing grade can milk	2.96	2.96	2.99	3.02	2.98
Three-State average¹					
Grade A bulk milk	3.55	3.59	3.74	3.75	3.66
Grade A can milk	3.45	3.49	3.64	3.66	3.56
Manufacturing grade can milk	3.00	3.04	3.06	3.11	3.05

¹Obtained by weighting the States' average monthly prices for each kind of milk with their 1956 annual receipts of each type.

Table 16. - *Prices, f.o.b. market, for Class I and lowest class Grade A milk from designated markets under Federal milk marketing orders, in selected months, 1956*

Prices paid	February	May	August	November	Four-month average
<i>Price per hundredweight of 3.5 percent milk</i>					
Chicago					
Class I	\$3.72	\$4.14	\$4.12	\$4.06	\$4.01
Lowest class	2.94	3.03	3.03	3.13	3.03
Minneapolis-St. Paul					
Class I	3.84	4.23	4.20	3.96	4.06
Lowest class	2.98	3.05	3.07	3.20	3.08
Milwaukee					
Class I	3.68	4.10	4.08	4.02	3.97
Lowest class	2.94	3.03	3.03	3.13	3.03
Cedar Rapids-Iowa City					
Class I	3.91	4.15	4.19	3.97	4.06
Lowest class	2.76	2.86	2.86	2.96	2.86
Four-market average ¹					
Class I	3.74	4.15	4.13	4.04	4.01
Lowest class	2.94	3.03	3.05	3.14	3.03

¹Average obtained by weighting monthly Class I and lowest class prices with pooled Grade A milk receipts used in each class and market.

Source: *Agricultural Marketing Service, U. S. Dept. of Agr.*

milk used in Class I⁷ and lowest class⁸ sales. Each dairy farmer received an average or blend of these prices based on either a marketwide or individual handler pool.⁹

Using the 4-market, 4-month average Class I premium as a benchmark and multiplying it by the proportion of Grade A milk used in fluid outlets reported by manufacturing concerns for the 4 months studied gave a market-justified premium of 53 cents (table 17).

⁷Prices paid by handlers for milk used in fluid products.

⁸Prices paid by dealers for milk used in manufactured dairy products.

⁹The average range of only 9 cents in Class I prices among the four markets indicates that economic factors affecting supply and demand for milk in these markets were much the same. The range of lowest class prices varied only 5 cents, excluding the Cedar Rapids - Iowa City market. This market's relatively low average price for manufacturing use milk may reflect local factors.

Finding close similarity between this 53-cent market-justified premium and the 51-cent premium paid by reporting cooperatives, we may conclude that Grade A premiums paid by cooperatives were based on natural market differences.

These data show that Grade A milk premiums were not "artificial" or created merely to satisfy Grade A producers. Nor, as often contended by manufacturing milk patrons, did ungraded milk returns subsidize Grade A producers. Quite the contrary. These data indicate that Grade A returns may even help support manufacturing milk operations.

Preceding comments are based on average, statewide and areawide data. Clearly an association could not justify

Table 17. - Comparison of Grade A milk premiums paid by cooperatives with market-justified Grade A premiums, in selected months, 1956.^{1 2}

Item	Grade A milk premiums							
	February		May		August		November	
	Paid by co-op.	Market justified	Paid by co-op.	Market justified	Paid by co-op.	Market justified	Paid by co-op.	Market justified
<i>Cooperatives reporting</i>								
Minnesota ³	\$0.50	\$0.52	\$0.48	\$0.67	\$0.61	\$0.90	\$0.56	\$0.57
Wisconsin ⁴	0.37	0.28	0.40	0.40	0.53	0.59	0.50	0.64
Iowa ⁵	0.72	0.77	0.64	0.74	0.72	1.08	0.72	0.89
Three-State average ⁶	0.45	-	0.45	-	0.58	-	0.55	-
Four-market average ⁷	-	0.35	-	0.46	-	0.65	-	0.65
								0.53

Price per hundredweight

¹Cooperative Grade A premiums are the result of average monthly Grade A can milk prices minus average monthly prices of manufacturing grade can milk reported by dairy manufacturing cooperatives from each State (table 15).
²Market-justified Grade A premiums are the result of weighting monthly Class I minus lowest class price differentials in designated Federal order markets with monthly fluid utilization ratios of dairy manufacturing concerns reporting from each State (derived from tables 3 and 16).
³Market-justified Grade A premiums for cooperatives reporting from Minnesota were based on the Minneapolis - St. Paul Federal order market.
⁴Market-justified Grade A premiums for cooperatives reporting from Wisconsin were based on the Chicago and Milwaukee Federal order markets.
⁵Market-justified Grade A premiums for concerns reporting from Iowa were based on the Cedar Rapids - Iowa City Federal order market.
⁶The result of weighting average monthly State Grade A can milk prices with 1956 annual intake of Grade A milk reported by concerns from each State and subtracting these figures from average monthly State manufacturing grade can milk prices weighted with 1956 annual intake of manufacturing grade milk reported by associations from each State.
⁷The result of multiplying monthly Class I - lowest class price differentials, obtained by weighting monthly Class I and lowest class prices with pooled Grade A receipts used in each class and market, by monthly fluid use ratios for all reporting concerns (obtained from table 3).

Source: Mail questionnaires returned to Farmer Cooperative Service and statistics of Agricultural Marketing Service, U. S. Dept. of Agr.

Table 18. - *Premiums paid to Grade A bulk milk producers in selected months, 1956*

Premium per hundredweight	February	May	August	November	Four-month average
<i>Cents</i>					
None	3	5	4	5	4
Less than 6	3	3	3	2	3
6 - 11.9	7	7	9	11	8
12 - 17.9	1	1	2	3	2
18 - 23.9	3	4	6	7	5
24 and over	4	3	1	2	3
	—	—	—	—	—
Total	21	23	25	30	25

paying these average premiums if it had Grade A outlets for only 20 or 30 per cent of the Grade A milk received.

In table 18, we find that by November 1956, of 81 reporting cooperatives 30 received both can and bulk Grade A milk. More than 80 percent of these 30 associations paid what amounted to bulk premiums as well as Grade A premiums. Slightly more than 2 in 5 paid bulk premiums of 6 to 12 cents a hundredweight. The next most common rate was from 18 to 24 cents. In many cases, premiums paid could properly be called "incentive payments." However, in others they indicated actual or expected reductions in milk receiving costs.

An average range of 92 cents a hundredweight separated highest and lowest average prices paid for Grade A milk by reporting cooperatives during the 4 months studied, as compared to only 45 cents for manufacturing grade milk (table 19). Grade A milk prices vary more between different geographic locations than manufacturing milk prices. This is largely because it costs more

to transport whole milk than the equivalent of that milk in manufactured products.

The current uptrend in Grade A milk production in this area is placing strong economic pressure on many manufacturing cooperatives to find additional fluid outlets for as much of this milk as possible. Greater instability in Grade A milk prices could result.

Table 19. - *Ranges in average prices paid for Grade A and manufacturing grade milk, 1956*

Month	Price range ¹	
	Grade A can milk	Manufacturing can milk
February	\$0.85	\$0.38
May	0.79	0.43
August	0.92	0.43
November	1.12	0.54
	—	—
Average	0.92	0.45

¹These ranges represented the extreme difference between the lowest and the highest average monthly prices reported by manufacturing cooperatives.

Problems Encountered

When asked to list major problems encountered in selling Grade A bulk milk or cream or both, almost 2 in 5 of the 57 cooperatives reporting indicated they experienced no major problems (table 20).

Bulk Milk

Supply in excess of effective demand ranked as the chief deterrent of bulk sales. Over a third of the cooperatives

listing major problems mentioned such excess supply.

Of all the cooperatives 20 percent named Federal milk order regulations, while 14 percent considered seasonality in market demand among their major problems. Slightly more than 11 percent reported restrictive health regulations.

Other frequently mentioned bulk selling problems were competition from lower priced milk and high plant-to-market transportation costs, each given

Table 20. - *Problems encountered by cooperatives in marketing Grade A bulk milk and cream*

Number of cooperatives	
Reporting	57
Indicating no major problem	22
Listing major problems	35
Major problems	
	Percent of cooperatives ¹
Market competition	
Supply of Grade A milk in excess of effective demand	34
Competition from lower-priced milk	9
Surplus milk in traditionally deficit supply areas	3
Market regulations	
Health	11
Federal milk order	20
Marketing costs	
Plant location too far from market	6
High transportation from plant to market	9
Procurement	
High hauling costs from farm to plant	3
Slow bulk pickup at farm	3
Seasonality	
In market demand	14
In milk production	6
Quality maintenance	3

¹Total exceeds 100 percent because some cooperatives listed more than one problem.

by 9 percent. Seasonality of milk production and poor plant location figured importantly in 6 percent of the associations.

Some concerns considered high hauling costs, slow farm bulk pickup, quality maintenance, and surplus milk in traditionally deficit supply areas among their major problems.

Bottled Milk

Cooperatives marketing bottled milk products reported some additional problems that associations making bulk sales did not encounter. Although both bottling and bulk-sales concerns re-

ported some of the same problems, percentages of occurrence differed (table 21). Of those bottling milk, 2 of 5 indicated no major problems.

Most firms faced one or more problems of marketing competition. The large number of dairy firms in their marketing areas bothered about two-fifths of the bottling cooperatives. Other marketing problems included competition from lower-priced milk, larger and more efficient plants, paper containers, and private-label brand milk.

Plant operating difficulties, production problems, and State and Federal regulations generally ranked far below competitive problems in frequency of listing.

Table 21. - *Problems encountered by cooperatives in marketing Grade A bottled milk products*

Number of cooperatives	
Reporting	47
Indicating no major problems	20
Listing major problems	27
Major problems	
	Percent of cooperatives ¹
Marketing competition from	
Minnesota Health Department inspected milk	4
Paper containers	7
Larger, more efficient plants	15
Too many dairy concerns in marketing area	41
Lower-priced milk	30
Private-label brand milk in large super markets	7
Multiquart containers	4
Plant operating difficulties with	
Defective paper cartons resulting in leakage	4
Maintaining quality	18
Seasonality in milk production	11
State and Federal regulations	7
Maintaining satisfaction of Grade A producers	4

¹Total exceeds 100 percent because many cooperatives listed more than one problem.

Thus we see that keen competition, arising from excess bulk milk supplies and too many bottling concerns in the

marketing area, had become the principal problem in selling Grade A milk in fluid outlets at the time of this survey.

Outlook and Policy

Many dairy cooperatives foresee an increase in their sales of Grade A milk. They think more of their members will be meeting Grade A standards, with a resulting uptrend in production. Some of these firms have, therefore, felt the need to adopt a definite policy on conversion of their farmer-patrons to production of Grade A milk.

Prospects for Grade A Sales

Despite disturbing problems in Grade A marketing encountered by many concerns, the majority of cooperatives surveyed in this study felt that Grade A fluid milk sales would increase during the following few years (table 22). Man-

agers made separate estimates for future sales of bulk milk and cream as well as for various types of bottled milk products and sizes of containers.

Bulk Products

Three-fourths of the relatively few dairy manufacturing cooperatives selling Grade A bulk cream -- 16 in all -- predicted that these sales would rise. Three cooperatives saw no change, and one forecast a decrease.

Of associations marketing bulk milk, two-thirds estimated a growth in their Grade A sales, 3 in 10 expected the current supply-demand situation to last for the next few years, at least, while only 1 in 20 feared a sales reduction.



To meet Grade A standards, barns must be kept clean, well-lighted and properly ventilated. Cows, too, must be kept clean. The ones in this photo look as if they have been scrubbed.

Table 22. - Estimated changes in Grade A fluid milk sales during the following few years

Predicted changes in sales of	Minnesota				Wisconsin				Iowa				Three-State total			
	No change	In- crease	De- crease	Total cooper- atives	No change	In- crease	De- crease	Total cooper- atives	No change	In- crease	De- crease	Total cooper- atives	No change	In- crease	De- crease	Total cooper- atives
Bulk milk	9	13	2	24	7	18	1	26	1	6	0	7	17	37	3	57
Bulk cream	3	4	0	7	0	6	1	7	0	2	0	2	3	12	1	16
Bottled milk																
Preparation																
Pasteurized only	3	4	5	12	1	2	1	4	1	2	1	4	5	8	7	20
Pasteurized and homogenized	10	15	1	26	3	7	0	10	2	8	1	11	15	30	2	47
Containers																
Paper	7	12	1	20	3	7	0	10	2	7	2	11	12	26	3	41
Glass	7	8	5	20	2	2	3	7	1	3	3	7	10	13	11	34
Dispenser cans	1	1	0	2	2	0	0	2	1	1	0	2	4	2	0	6

Number of cooperatives reporting

Bottled Products

Glancing at estimates for bottled milk, we find that two-thirds of reporting concerns expected mounting sales for their pasteurized-homogenized Grade A milk. Nearly a third saw no sales change, while two associations predicted their sales of such milk would diminish.

Cooperatives painted a less favorable picture for non-homogenized pasteurized milk. Only 40 percent predicted such sales would multiply as compared with 35 percent fully expecting fewer sales and 25 percent seeing no change. Firms that have, or can afford, a homogenizer probably are not greatly concerned about consumers demanding homogenized milk. A dwindling market for non-homogenized milk would impose an additional hardship on many plants with low-volume bottling operations.

Comparing expected sales by types of containers, we noted that nearly two-thirds of the cooperatives believed their marketing of Grade A in paper containers would grow; while only two-fifths

bottling in glass expected an increase. Three-fifths of the associations foresaw a decrease or no change in their sales of Grade A in glass.

Cooperatives predicted trends for their individual types of bottled milk sales and types of containers, but not the total amount of bottled milk they would sell. Separate estimates appeared optimistic for firms that could offer homogenized milk in paper containers. Industry trends and other research support these findings because they do not hold out great hope for firms that hold the line with the formerly standard product -- the pasteurized quart of milk in glass.

More Grade A Producers

Along with expanding Grade A fluid sales, reporting cooperatives predicted increases in the number of farmer-patrons producing Grade A milk (table 23).

The Grade A operation of nearly all associations remained a sideline, with most patrons delivering manufacturing grade milk. As of August 1957, about

Table 23. - *Percentage of patrons producing Grade A milk reported in 1957 and expected in 1962*

State	Percentage of patrons producing Grade A milk					Total number of cooperatives ¹
	Under 10	10-19	20-29	30-39	40 and over	
<i>Number of cooperatives reporting specified percentages in 1957</i>						
Minnesota	17	4	2	2	1	26
Wisconsin	5	7	1	0	13	26
Iowa	8	1	0	0	0	9
Total	30	12	3	2	14	61
<i>Number of cooperatives expecting specified percentages in 1962</i>						
Minnesota	4	6	9	0	7	26
Wisconsin	1	3	2	3	17	26
Iowa	6	2	1	0	0	9
Total	11	11	12	3	24	61

¹Twenty cooperatives did not report this data.



Many Midwestern dairy farmers with fine herds such as this one are changing to meet Grade A standards. They are insisting that their co-ops equip themselves for receiving and marketing Grade A milk.

half the 61 cooperatives reported under 10 percent of their farmer-patrons delivering Grade A milk.

One-fifth said between 10 and 20 percent of their patrons produced Grade A milk; 3 cooperatives had between 20 and 30 percent; and 2, between 30 and 40 percent. Only 14 cooperatives, 13 of them in Wisconsin, had 40 percent or more Grade A producing patrons.

Most cooperatives hoped to expand their Grade A operations. They predicted that more of their producers would be meeting Grade A standards by 1962. Those with only a few Grade A producers, for the most part, expected the number to increase. A sizable number of associations anticipated developing a major Grade A operation. By 1962, two-fifths of reporting firms expected to have 40 percent or more of their patrons producing Grade A milk.

Such predictions of future Grade A conversion may be considered surprising in view of data in table 3 showing that

nearly half the Grade A intake of reporting concerns was used for manufacturing purposes. Continued development of Grade A supplies may place a real burden on many firms to discover and develop larger fluid outlets.

Uptrend in Production

Most managers of reporting cooperatives marketing Grade A milk not only predicted further Grade A conversions among their own patrons but also confirmed this by estimating a current uptrend in Grade A milk production in their areas. Such production trends may give a clue to the competitive pressure dairy manufacturing concerns were feeling to handle Grade A milk.

Of 79 Grade A organizations responding to the question, "Do you think there is an uptrend in Grade A milk production in your area?" 82 percent said "Yes"; the remainder said "No". Of Wisconsin's

Table 24. - *Estimates of current Grade A production uptrend in area of reporting cooperatives*

State	Grade A cooperatives reporting			
	Uptrend	No uptrend	Uptrend	No uptrend
	Number		Percent	
Minnesota	28	9	76	24
Iowa	11	2	85	15
Wisconsin	26	3	90	10
	—	—	—	—
Total or average ¹	65	14	82	18

¹Data not reported by 2 cooperatives.

associations, 90 percent replied affirmatively as did 85 percent in Iowa and 76 percent in Minnesota (table 24).

Policy Toward Conversion

Cooperatives have been less quick to encourage or finance their farmer-patrons' conversion to production of Grade A milk than they have been to

acknowledge the growing trend toward such production.

Encouragement

Although 82 percent of the cooperatives listed in table 24 believed the trend in their areas was toward Grade A production, at least 3 of 5 did not encourage their ungraded milk shipping patrons to equip themselves for producing Grade A (table 25). One-half of Wisconsin's associations were encouraging conversion, as compared to only one-third of those in Minnesota and Iowa.

Financial Assistance

Of 73 cooperatives reporting, 20 offered financial assistance to ungraded-milk producers for making physical changes necessary in Grade A conversion. The remaining 53 did not offer financial assistance (table 26). Of those reporting from Wisconsin, 35 percent said they would back such conversion financially as compared with 26 percent in Minnesota and only 15 percent in Iowa.

Table 25. - *Cooperatives classified by their policy toward conversion of manufacturing grade milk producers to Grade A producers*

State	Cooperatives reporting			
	Encourage conversion	Do not encourage conversion	Encourage conversion	Do not encourage conversion
	Number		Percent	
Minnesota	11	23	32	68
Iowa	4	8	33	67
Wisconsin	12	10	54	46
	—	—	—	—
Total or average ¹	27	41	40	60

¹Data not reported by 13 cooperatives.

Table 26. - *Cooperatives classified by their policy toward offering financial assistance to manufacturing grade producers*

State	Cooperatives reporting			
	Offer financial assistance	Do not offer financial assistance	Offer financial assistance	Do not offer financial assistance
	<i>Number</i>		<i>Percent</i>	
Minnesota	9	25	26	74
Iowa	2	11	15	85
Wisconsin	9	17	35	65
	—	—	—	—
Total or average ¹	20	53	27	73

¹Data not reported by eight cooperatives.

Fluid Sidelines Based on Non-Grade A Milk

Up to this point, we have closely examined dairy manufacturing concerns with Grade A sidelines -- their reasons for diversifying, some major problems encountered, uses found for Grade A milk, and the outlook for Grade A sales.

To complete the fluid sideline picture, however, we need to compare dairy manufacturing organizations with ungraded fluid milk operations. How closely do they parallel Grade A firms in terms of size, primary manufacturing operations, volumes received, prices paid farmer-patrons, and sales prospects? What is their opinion of the future of Grade A fluid sidelines?

Answers to these and similar questions are shown in appendix tables on ungraded fluid milk marketing.

The greatest number of non-Grade A manufacturing cooperatives expanded into the fluid milk field almost immediately after World War II mainly to meet increasing local customer demand for bottled milk. Most Grade A firms diversified between 1951 and 1956, chiefly because they believed in a growing trend toward Grade A production.

Ungraded fluid milk operations fell even more into the sideline category than Grade A fluid operations. Reporting non-Grade A cooperatives manufactured about 90 percent of all milk received that was qualified for fluid use, whereas just over one-half the Grade A butterfat reached fluid outlets.

While cooperatives bottling both ungraded and Grade A milk felt competition from too many rivals in their marketing area, non-Grade A firms ranked competition from milk packaged in paper containers and Grade A bottled milk as equally important. Bulk milk marketing cooperatives -- both Grade A and ungraded -- noted excess supply, although non-Grade A concerns were more adversely affected by seasonality in market needs than Grade A firms were.

Cooperatives handling Grade A milk appeared much more optimistic regarding sales increases than ungraded firms did. Only when estimating sales of pasteurized-homogenized milk did the majority foresee an uptrend in local demand. This generally more pessimistic outlook of non-Grade A concerns,

coupled with the problem of intense competition from Grade A bottled products, led about half the reporting ungraded concerns to consider seriously converting to a Grade A inspection basis within the following 5 years. Of these, almost 60 percent definitely planned to diversify into Grade A milk handling.

Responding to the question "Do you think there is an uptrend in Grade A milk production in your area?" slightly over half the reporting cooperatives marketing ungraded fluid milk acknowledged such a trend.

Both ungraded concerns and their individual farmer-patrons were small in output volume when compared with Grade A cooperatives and their individual member-producers. Nine of 10 ungraded firms had less than 400 patrons each, while only half the Grade A concerns had as few. No non-Grade A firm reported membership of 800 or over, but 16 Grade A cooperatives had from 800

to 1,200 or more members.

Farmers shipping non-Grade A milk averaged not quite half the volume per patron per day of Grade A producers. They did, however, earn a small fluid-use premium, usually about 14 cents a hundredweight. Grade A producers, shipping in cans, averaged nearly four times as much.

In primary manufacturing operations, we found only butter-making prevailing throughout all sizes of ungraded cooperatives. As these cooperatives increased in size, they diversified to a much less degree than Grade A firms. At the start of non-Grade A fluid operations, 8 of 10 firms merely bottled milk for local customers. By 1956, only 6 in 10 bottled milk exclusively, and more firms had added variations of bulk milk or cream sales or both. Only 2 of 34 plants bottled ungraded milk in building facilities separate from manufacturing, emphasizing the minor nature of these fluid sidelines.

Single Standard for Milk: Needless or Necessary?

In this report, we have seen that in many places supply of Grade A fluid milk exceeded market demand. Some major problems of Grade A handling -- such as excess supply; restrictive local, State, and Federal regulations; fiercely competitive pricing; premium payments; and quality maintenance, -- may rightly make cooperative management pause when considering diversifying into Grade A handling.

We have also observed in this study many plants that have undertaken Grade A milk handling and have found Grade A fluid outlets for only a small proportion of this milk. Much data from this report may thus seem pessimistic regarding diversification into Grade A fluid handling.

However, to round out and balance one's reasoning based on such economic

and accounting data, we need to evaluate the opinions of many experts in the industry who predict a single standard of milk quality.¹⁰

Many observers, on both State and National levels, foresee the future health and development of the dairy industry best served by moving toward a single standard for both manufacturing milk and milk for fluid use. They see little justification in grading milk by use.

A University of Wisconsin dairy specialist asserts: "The number one problem of the dairy industry in the

¹⁰ A single standard of milk quality refers to one quality standard for all milk whether it is to be bottled or manufactured. Current legislative proposals, such as the "National Milk Sanitation Act" do not refer to a single standard for both fluid and manufacturing purposes, but rather call for greater uniformity between markets in standards for fluid use only. Thus the issue discussed here is entirely different from the current legislative proposals.



Today's quality-conscious consumer buys her Grade A milk through such retail outlets as this modern supermarket -- a far cry from the days of farm-delivered ungraded milk.

present and future is that of quality." Among his reasons for the increasing importance of good quality to all branches of the industry are growing consumer interest, keener competition from other foods, lag in milk and cream technology, Government purchases based on quality, and sharp attention of the U.S. Food and Drug Administration on unsanitary conditions.¹¹

Listing three major current movements--bulk pickup of milk on the farm, complete eradication of brucellosis from herds, and the trend toward a requirement that Grade A milk be the basis of all interstate movement in dairy

products--"Dairy Record," a leading National periodical, states editorially:

"There seems to be no widespread exception to the belief that, sooner or later, Grade A milk will be required in the manufacture of all dairy products entering the most desirable markets, as well as for table use. There seems to be a general disposition to feel that public health authorities will create such a demand among consumers, and that it is useless to oppose such a development. The major difference of opinion concerns the timing of the requirement, rather than its inevitability."¹²

"The trend in milk production is toward one quality of milk acceptable for all purposes," affirms an official in Minnesota's Department of Agriculture.¹³

In another issue "Dairy Record" reasserts that "...farmers are probably right in their conjecture that ultimately all markets will demand Grade A milk, not only for household use but in all dairy products entering such markets in whatever form."¹⁴

If and when such a single standard for milk can be agreed upon, experts contend, interstate control measures will be simplified; consumers will receive higher quality milk, and the entire industry will operate in a more efficient and stabilized manner.

Writing in "Hoard's Dairyman," an internationally-known dairy technologist summarizes the case for a single standard:

"It seems illogical to set standards for milk quality on the basis of its use. Milk, regardless of how it is used, is either good or bad.

"Why, then, should milk not good enough for the fluid trade be satisfactory for ice cream or evaporated milk? Or,

¹²"Brucellosis, Next," editorial, from "Dairy Record," January 19, 1955, p. 22.

¹³Minnesota Department of Agriculture Dairy and Food, "Annual Report," 1954, p. 15.

¹⁴"Behind The News," editorial, from "Dairy Record," February 29, 1956, p. 22.

¹¹Wallenfeldt, Evert, "Raw Milk Quality for Dry Milk Production" (Mimeographed handout, n.d.), Department of Dairy and Food Industries, University of Wisconsin, p. 1.

if not good enough for these two outlets, be considered satisfactory for cheese? And, if rejected by the cheese manufacturer, be acceptable for butter-making?

"It surely could not be on a public health basis that such a classification exists. We have told the public for years that pasteurization makes all milk safe for human consumption.

"Are we to justify, then, the distinction between milk good enough for bottling and that acceptable for cheese or evaporated purposes on the basis of the amount of undissolved sediment or the environment under which it was produced? If so, can we defend such a ruling in the critical eyes of the consuming public?

"Would it not be wiser for our in-

dustry not to try to justify such discrimination in milk quality buying standards but, instead, establish a single standard of quality for milk regardless of its use?"¹⁵

In the face of the foregoing arguments, we cannot say conclusively that economic and accounting data such as those gained from this survey adequately analyze the picture. Yet if the single standard for both fluid use and manufacturing use is to be adopted, it is clear that those cooperatives who have foreseen this trend and have taken early action toward this idea may best serve their farmer-patrons and the industry in their area.

¹⁵Tracy, Paul, "Are We Ready for a Single Standard for Milk?" "Hoard's Dairyman," vol. 103, September 10, 1958, p. 877.

Appendix

<u>Appendix table</u>	<u>Title</u>	<u>Corresponding text table(s)</u>
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4	Intake of ungraded milk qualified for fluid use and types of products manufactured by cooperatives, 1956	5
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Appendix table 1. - *Cooperatives adding ungraded fluid milk operations in Minnesota and Iowa, 1927-57*

Year	Cooperatives	
	Number	Percent
1927-32	4	11.4
1933-38	3	8.6
1939-44	9	25.7
1945-50	12	34.3
1951-56	7	20.0
1957 ¹	None	-
Total ²	35	100.0

¹Data for 1957 are incomplete.

²Data not reported for eight cooperatives.

Appendix table 2. - *Reasons cooperatives added ungraded fluid milk operations*

Item	Minnesota	Iowa	Two-State total ¹
Number of cooperatives reporting	34	9	43
Percent of cooperatives			
Reasons ²			
To supply fluid milk to distributor(s) during periods of short supply	6	-	5
To meet competition from another dairy firm buying fluid milk in the area	24	56	30
To prevent loss of producer-patrons wanting to have a fluid milk sales outlet	29	56	35
To obtain higher sales price for producers' fluid milk	44	-	35
To meet local customers' demands	71	89	74
To provide sales outlet for producers wishing to shift from farm-separated cream to whole milk	41	56	44
Belief in trend toward Grade A milk production and the association should begin "gearing" itself to this trend	18	22	19
To find new outlets for butterfat in face of declining market for butter	15	22	16

¹Postal card inquiry indicated four cooperatives in Wisconsin marketing ungraded fluid milk in 1956, but none responded to questionnaire.

²Total exceeds 100 percent because most cooperatives gave more than one reason.

Appendix table 3. - Volume of non-Grade A butterfat qualified for fluid uses marketed in fluid outlets and manufactured products for selected months, 1956

Utilization ¹	February		May		August		November		Four-month average	
	Butterfat use	Percentage of total	Butterfat use	Percentage of total	Butterfat use	Percentage of total	Butterfat use	Percentage of total	Butterfat use	Percentage of total
	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent	1,000 pounds	Percent
Minnesota										
Fluid use ²										
Bulk milk shipments	47	4.5	46	4.4	57	5.5	53	5.1	51	4.9
Bulk cream shipments	4	0.4	4	0.4	8	0.8	5	0.5	5	0.5
Bottled milk and cream	47	4.5	43	4.2	50	4.8	53	5.1	48	4.6
All fluid uses	98	9.4	93	9.0	115	11.1	111	10.7	104	10.0
Manufacturing use ²	940	90.6	945	91.0	923	88.9	927	89.3	934	90.0
Total ³	1,038	100.0	1,038	100.0	1,038	100.0	1,038	100.0	1,038	100.0
Iowa										
Fluid use ²										
Bulk milk shipments	8	27.6	8	27.6	8	27.6	8	27.6	8	27.6
Bulk cream shipments	-	-	-	-	-	-	-	-	-	-
Bottled milk and cream	9	31.0	9	31.0	9	31.0	9	31.0	9	31.0
All fluid uses	17	58.6	17	58.6	17	58.6	17	58.6	17	58.6
Manufacturing use ²	12	41.4	12	41.4	12	41.4	12	41.4	12	41.4
Total ⁴	29	100.0	29	100.0	29	100.0	29	100.0	29	100.0
Two-State area⁵										
Fluid use										
Bulk milk shipments	55	5.2	54	5.1	65	6.1	61	5.7	59	5.5
Bulk cream shipments	4	0.4	4	0.4	8	0.8	5	0.5	5	0.5
Bottled milk and cream	56	5.2	52	4.9	59	5.5	62	5.8	57	5.3
All fluid use	115	10.8	110	10.4	132	12.4	128	12.0	121	11.3
Manufacturing use	952	89.2	957	89.6	935	87.6	939	88.0	946	88.7
Total	1,067	100.0	1,067	100.0	1,067	100.0	1,067	100.0	1,067	100.0

¹Data on utilization of butterfat received in whole milk qualified for fluid use were received as percentage figures for selected months.²Butterfat pounds indicated in fluid and manufacturing uses are weighted averages calculated by multiplying average monthly ungraded fluid milk butterfat receipts per cooperative by the percentage utilization figures reported by each cooperative for selected months.³Average monthly ungraded milk butterfat receipts qualified for fluid use of 31 dairy manufacturing cooperatives.⁴Average monthly ungraded milk butterfat receipts qualified for fluid use of 8 dairy manufacturing cooperatives.⁵Postal card inquiry indicated 4 cooperatives in Wisconsin marketing ungraded fluid milk in 1956, but none responded to questionnaire.

Appendix table 4. - *Intake of ungraded milk qualified for fluid use and types of products manufactured by cooperatives, 1956*

Item	Yearly ungraded milk intake per cooperative in million pounds ¹					All volume groups
	Under 3	3-11.9	12-20.9	21-30.0	Over 30	
Number of cooperatives in each volume group	24	9	5	1	4	43
<i>Percent of total cooperatives in each volume group</i>						
Product manufactured						
Dry buttermilk	-	-	-	-	-	-
American cheese	-	11	-	-	25	5
All other cheese	-	11	-	-	-	2
Non-fat dry milk						
Roller	-	-	20	-	25	5
Spray	8	-	-	-	50	9
Butter	100	100	100	100	100	100
Ice cream mix and/or ice cream	8	22	-	-	-	9
Condensed and evaporated milk	-	-	-	-	-	-
Other condensed products	-	-	-	-	-	-
Dry whole milk	-	-	-	100	-	2

¹1956 ungraded B. F. receipts converted to 3.5 percent milk equivalent.

Appendix table 5. - *Cooperatives classified by types of operations at start of ungraded fluid milk marketing and in 1956*

Item	Minnesota		Iowa		Two-State total ¹	
	At start	In 1956	At start	In 1956	At start	In 1956
Number of cooperatives reporting	34		9		43	
<i>Percent of cooperatives</i>						
Type of fluid milk marketing operation						
Bulk milk	11.8	8.8	11.1	11.1	11.6	9.3
Bulk cream	2.9	-	-	-	2.3	-
Bottled milk products	76.5	47.1	88.9	88.9	79.1	55.8
Bulk milk and bottled milk products	2.9	20.6	-	-	2.3	16.3
Bulk milk, bulk cream, and bottled milk products	-	11.8	-	-	-	9.3
Bulk milk and bulk cream	5.9	8.8	-	-	4.7	7.0
Bulk cream and bottled milk products	-	2.9	-	-	-	2.3

¹Postal card inquiry indicated four cooperatives in Wisconsin marketing ungraded milk for fluid consumption in 1956 but none responded to questionnaires.

Appendix table 6. - Containers used by cooperatives bottling ungraded milk products at start and in 1956

Container	At start	In 1956
<i>Percent of cooperatives</i>		
Glass	80.0	44.4
Paper	14.3	19.5
Glass and paper	5.7	33.3
Glass, paper, and dispenser cans	-	2.8
Total number of cooperatives bottling milk products	35	36

Appendix table 7. - Type and location of ungraded milk bottling facilities reported by cooperatives

Type	Location		All cooperatives
	In same building with manufacturing facilities	In separate building	

Number of cooperatives

Minnesota			
Glass	13	1	14
Paper	7	-	7
Glass and paper	7	-	7
Glass, paper, and dispenser cans	-	-	-
	—	—	—
Total	27	1	28
Iowa			
Glass	2	-	2
Paper	-	-	-
Glass and paper	4	1	5
Glass, paper, and dispenser cans	1	-	1
	—	—	—
Total	7	1	8
Two-State total ¹			
Glass	15	1	16
Paper	7	-	7
Glass and paper	11	1	12
Glass, paper, and dispenser cans	1	-	1
	—	—	—
Total	34	2	² 36

¹Postal card inquiry indicated four cooperatives in Wisconsin marketing ungraded fluid milk in 1956 but none responded to questionnaire.

²Seven cooperatives were marketing ungraded fluid milk and/or cream in bulk form.

Appendix table 8. - *Producer-patrons classified by number shipping, volume of annual shipments, and volume shipped per day, 1956*

Item	Minnesota	Iowa	Two-State total ¹
<i>Number</i>			
Dairy manufacturing cooperatives reporting	34	9	43
Number of patrons shipping			
Ungraded milk qualified for			
Fluid use	3,986	159	4,145
Manufacturing use only	1,147	549	1,696
Farm-separated cream	2,751	680	3,431
Total	7,884	1,388	9,272
<i>Million pounds</i>			
Annual volume shipped ²			
Ungraded milk qualified for			
Fluid use	364.8	20.1	384.9
Manufacturing use only	114.9	46.9	161.8
Farm-separated cream	137.1	35.9	173.0
Total	616.8	102.9	719.7
<i>Pounds</i>			
Volume per patron per day			
Ungraded milk qualified for			
Fluid use	251	346	254
Manufacturing use only	274	234	263
Farm-separated cream	137	146	137
All patrons	214	203	211

¹Postal card inquiry indicated four cooperatives in Wisconsin marketing ungraded fluid milk in 1956, but none responded to questionnaire.

²1956 B. F. intake converted to 3.5 percent milk equivalent.

Appendix table 9. - *Predominant types of producers shipping to cooperatives ranged by membership*

Producer-patrons per cooperative	Total		Percentages of total number of producers shipping			
	Cooperatives reporting	Producers served	Ungraded milk qualified for		Farm- separated cream	Total
			Fluid use	Manufacturing use only		

Appendix table 10. - *Average monthly prices paid to patrons for ungraded milk qualified either for fluid use or for manufacturing use only in selected months, 1956*

Prices paid	February	May	August	November	Four-month average
<i>Price per 100 lbs. of 3.5 percent milk</i>					
Minnesota					
Ungraded milk qualified for					
Fluid use	\$3.11	\$3.13	\$3.15	\$3.20	\$3.15
Manufacturing use only	2.98	3.01	3.03	3.07	3.02
Iowa					
Ungraded milk qualified for					
Fluid use	3.37	3.37	3.36	3.38	3.37
Manufacturing use only	3.10	3.10	3.09	3.10	3.10
Two-State average ¹					
Ungraded milk qualified for					
Fluid use	3.13	3.17	3.18	3.23	3.18
Manufacturing use only	3.00	3.03	3.04	3.08	3.04

¹The result of weighting average monthly State prices by the number of cooperatives reporting from each State.

Appendix table 11. - *Problems encountered by cooperatives in marketing ungraded fluid milk and cream in bottled and bulk form*

Item	Bottled milk products	Bulk milk and/or cream
Number of cooperatives		
Reporting	36	19
Indicating no major problems	15	12
Listing major problems	21	7
Percent ¹		
Major problems		
Competition from homogenized milk	5	-
Dissatisfaction with home delivery	5	-
Competition from outer-market firms	10	-
Maintaining quality	14	-
Seasonality in market demand	-	43
Too many competitors in marketing area	19	14
Competition from paper containers	19	-
Competition from Grade A bottled milk	19	-
Competition from larger, more efficient plants	14	-
Competition from lower-priced milk	10	29
Meeting State requirements about equipment	5	14

¹Total exceeds 100 percent because some cooperatives listed more than one problem.

Appendix table 12. - Estimated changes in ungraded fluid milk sales during the following few years

Predicted changes in sales of	Minnesota				Iowa				Two-State total		
	No change	Increase	Decrease	Total cooper- atives	No change	Increase	Decrease	Total cooper- atives	No change	Increase	Decrease
Bulk milk	7	7	3	17	1	-	-	1	8	7	3
Bulk cream	4	3	1	8	-	-	-	-	4	3	1
Bottled milk											
Preparation											
Pasteurized only	5	5	7	17	1	1	2	4	6	6	9
Pasteurized and homogenized	5	12	1	18	3	3	1	7	8	15	2
Containers											
Paper	6	6	2	14	3	3	-	6	9	9	2
Glass	4	6	11	21	2	2	4	8	6	8	15
Dispenser cans	-	-	-	-	1	-	-	1	1	-	-

Number of cooperatives reporting

Appendix table 13. - *Cooperatives classified by whether they expect to convert their ungraded fluid milk operation to a Grade A inspection basis 5 years from time of survey*

State ¹	Cooperatives reporting					
	Yes	No	Maybe	Yes	No	Maybe
	Number			Percent		
Minnesota	10	17	7	29	50	21
Iowa	2	5	2	22	56	22
Total	12	22	9	28	51	21

¹Postal card inquiry indicated four cooperatives in Wisconsin marketing ungraded fluidmilk in 1956, but none responded to questionnaire.

Appendix table 14. - *Estimates of current Grade A production uptrend in area of reporting cooperatives*

State ¹	Non-Grade A cooperatives reporting			
	Yes	No	Yes	No
	Number		Percent	
Minnesota	17	15	53	47
Iowa	4	5	44	56
Total ²	21	20	51	49

¹Postal card inquiry indicated four dairy manufacturing cooperatives in Wisconsin marketing ungraded fluid milk in 1956, but none responded to questionnaire.

²Data not reported by two cooperatives.

